

# Economic and Market Strategy Update

May 2020



**Investment and Insurance Products: ▶ NOT FDIC-Insured ▶ NO Bank Guarantee ▶ MAY Lose Value**

# Today's agenda

Where are we in this economic cycle?

Where are we in this market?

Investment strategies to consider in portfolios

# Economic outlook

	2020E	2019	2018
Global GDP growth	-3.3% <sup>1</sup>	3.0% <sup>1</sup>	3.6%
U.S. GDP growth	-5.5% <sup>1</sup>	2.3% <sup>2</sup>	2.9%
U.S. CPI	1.3% <sup>1</sup>	1.8% <sup>3</sup>	2.4%
U.S. unemployment rate	8.5% <sup>1</sup>	3.5% <sup>4</sup>	3.9%
U.S. Federal Funds rate	0.00-0.25%	1.6%	2.4%
10-Year U.S. Treasury	0.75-1.25%	1.9%	2.7%
30-Year U.S. Treasury	1.50-2.00%	2.4%	3.0%

<sup>1</sup> Forecast by Wells Fargo Securities' Economic Group, as of May 5, 2020.

<sup>2</sup> "Latest" is year-over-year percent change 2019 versus 2018.

<sup>3</sup> Average annual percentage rate for 2019.

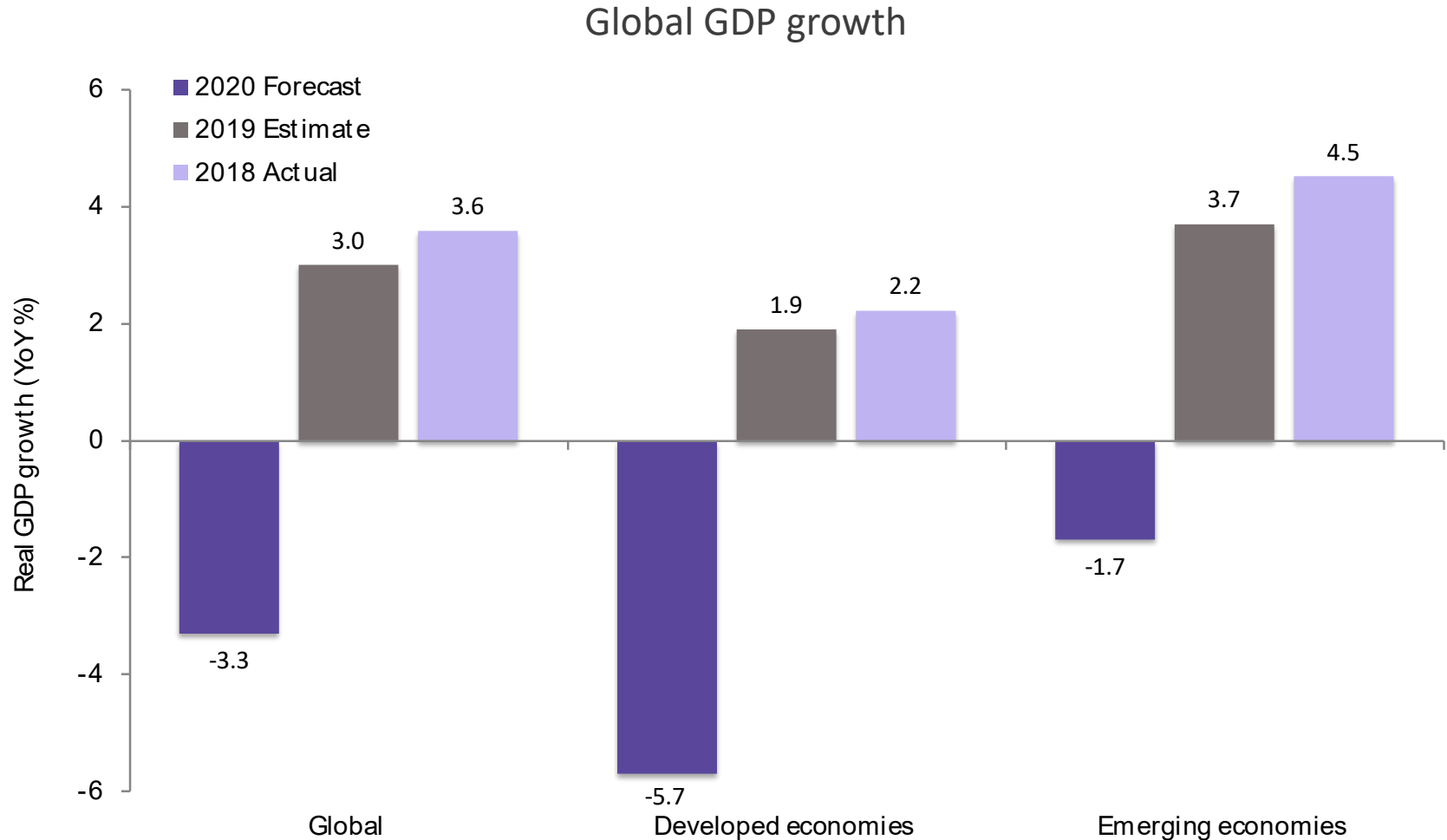
<sup>4</sup> As of fourth quarter 2019 average.

Sources: Bloomberg, International Monetary Fund (IMF), Wells Fargo Securities Economics Group, Wells Fargo Investment Institute, December 31, 2019. 2020E updated on May 5, 2020. GDP = Gross Domestic Product. CPI = Consumer Price Index. The CPI measures the price of a fixed basket of goods and services purchased by an average consumer.

Yields represent past performance and fluctuate with market conditions. **Past performance is no guarantee of future results.** Estimates are subject to change.

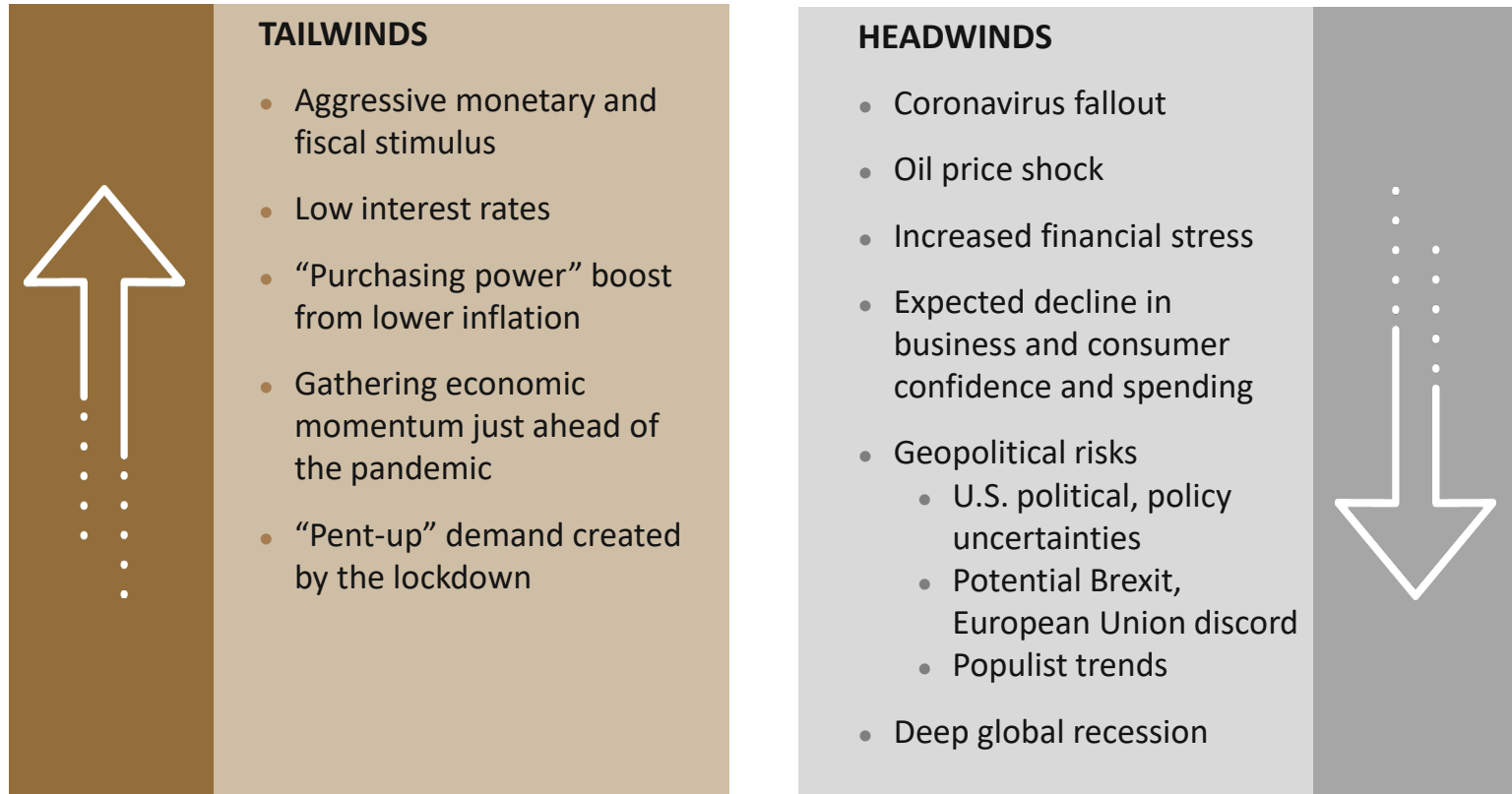
# Global GDP outlook

We expect global GDP to contract in 2020 as the negative economic impact of coronavirus spreads



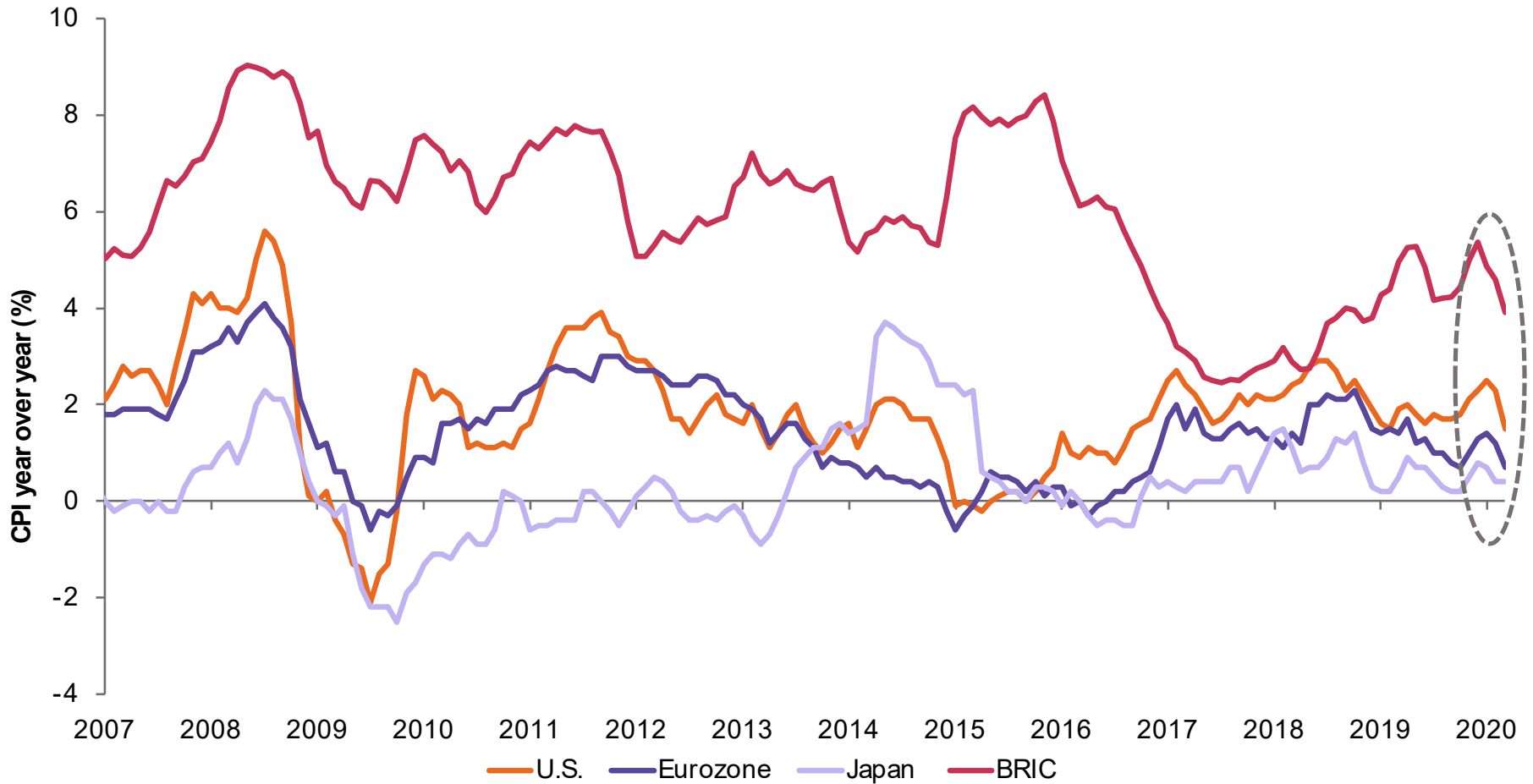
# Factors that affect the global economy

## Global economic forces



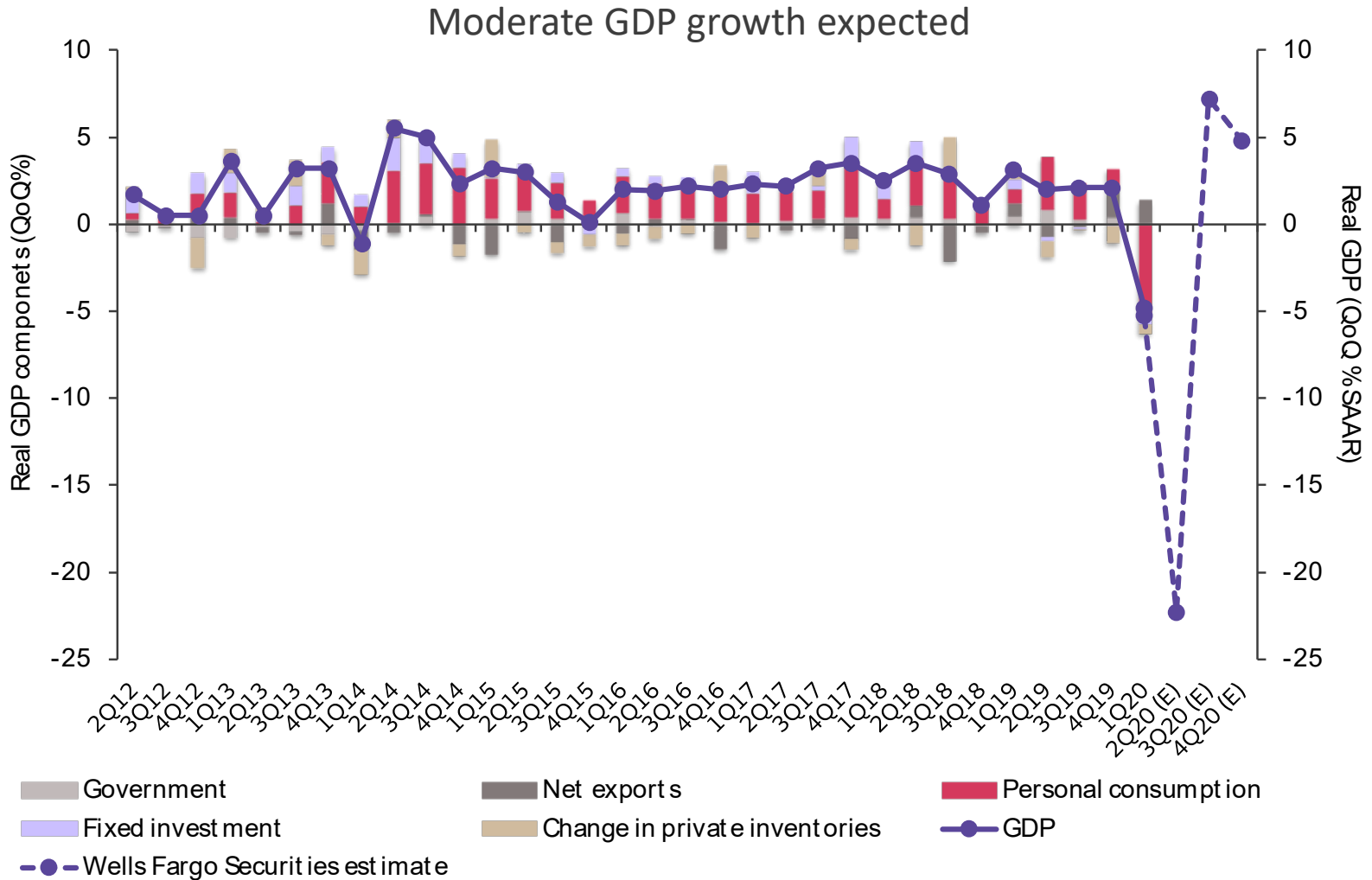
# Inflation may have peaked

Inflation decreased across the board



# U.S. GDP outlook

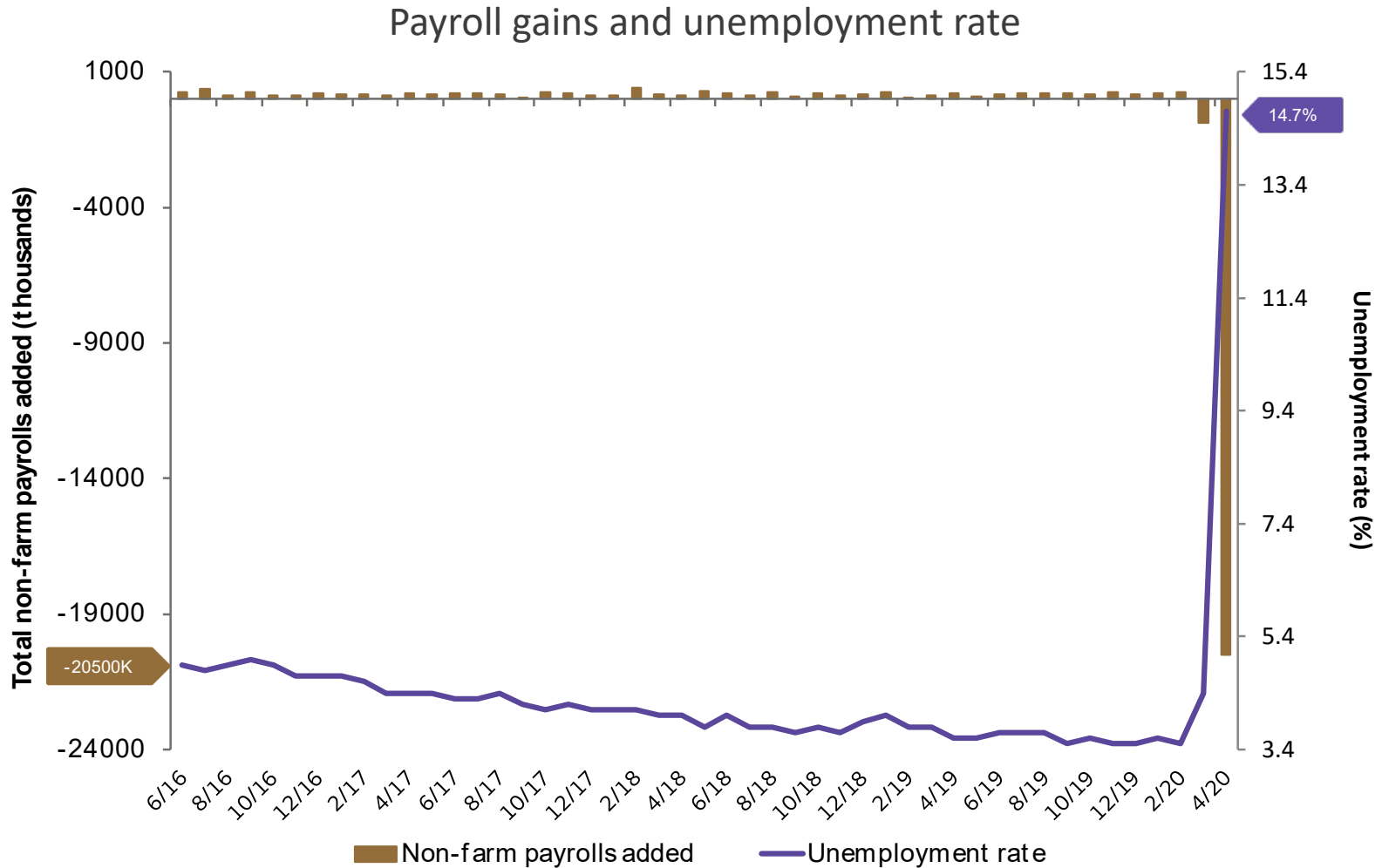
The coronavirus is likely to lead to a deep contraction in second quarter GDP



Source: Bloomberg, Wells Fargo Securities Economics Group. GDP as of March 31, 2020. 1Q20-4Q20 data is a Wells Fargo Securities Economics Group forecast as of April 8, 2020. QoQ = quarter over quarter. SAAR = Seasonally Adjusted Annual Rate. GDP = Gross Domestic Product. Estimates are subject to change.

# Employment situation likely to worsen

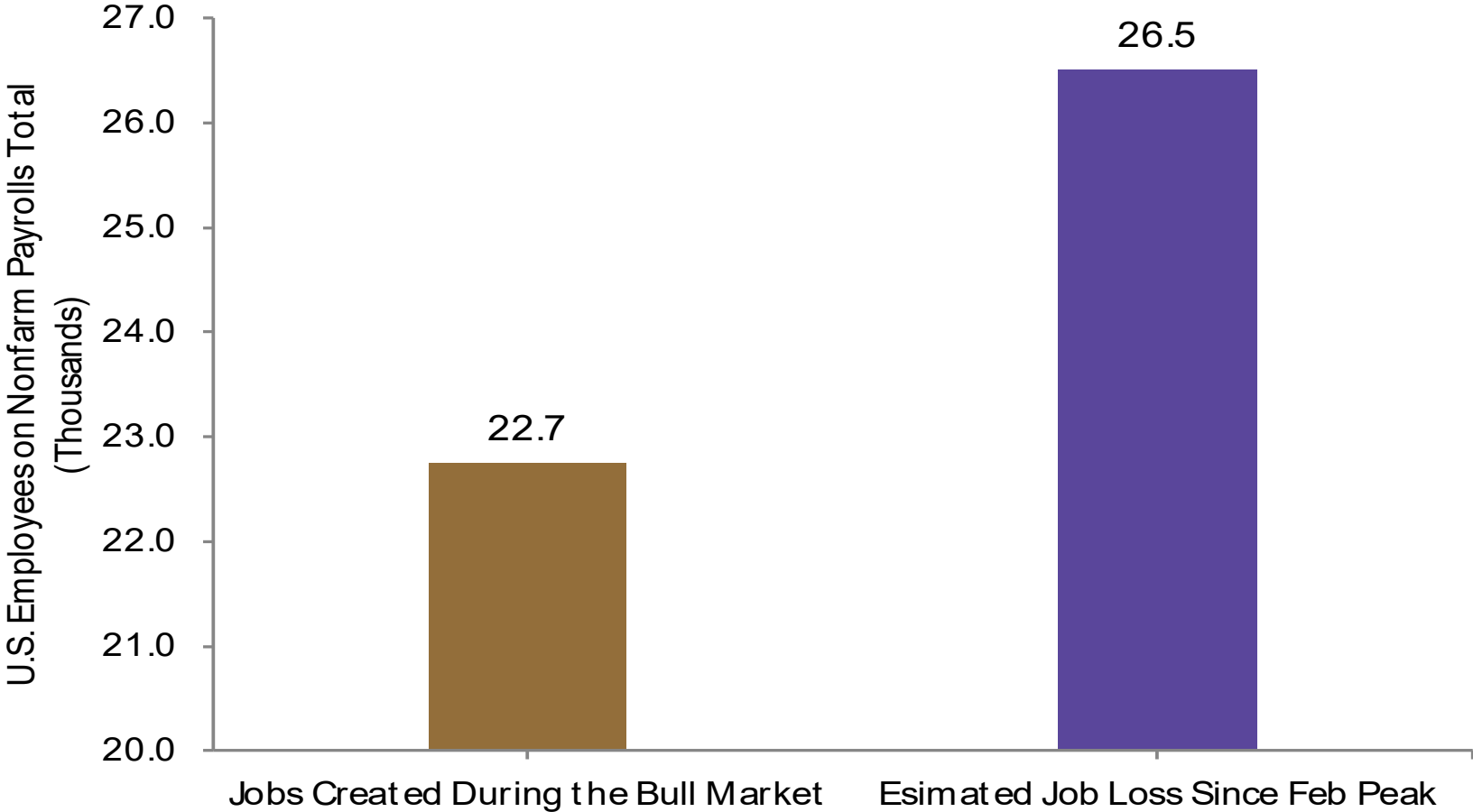
The unemployment rate exceeded the financial crisis rate in April





# Job loss exceeds job creation

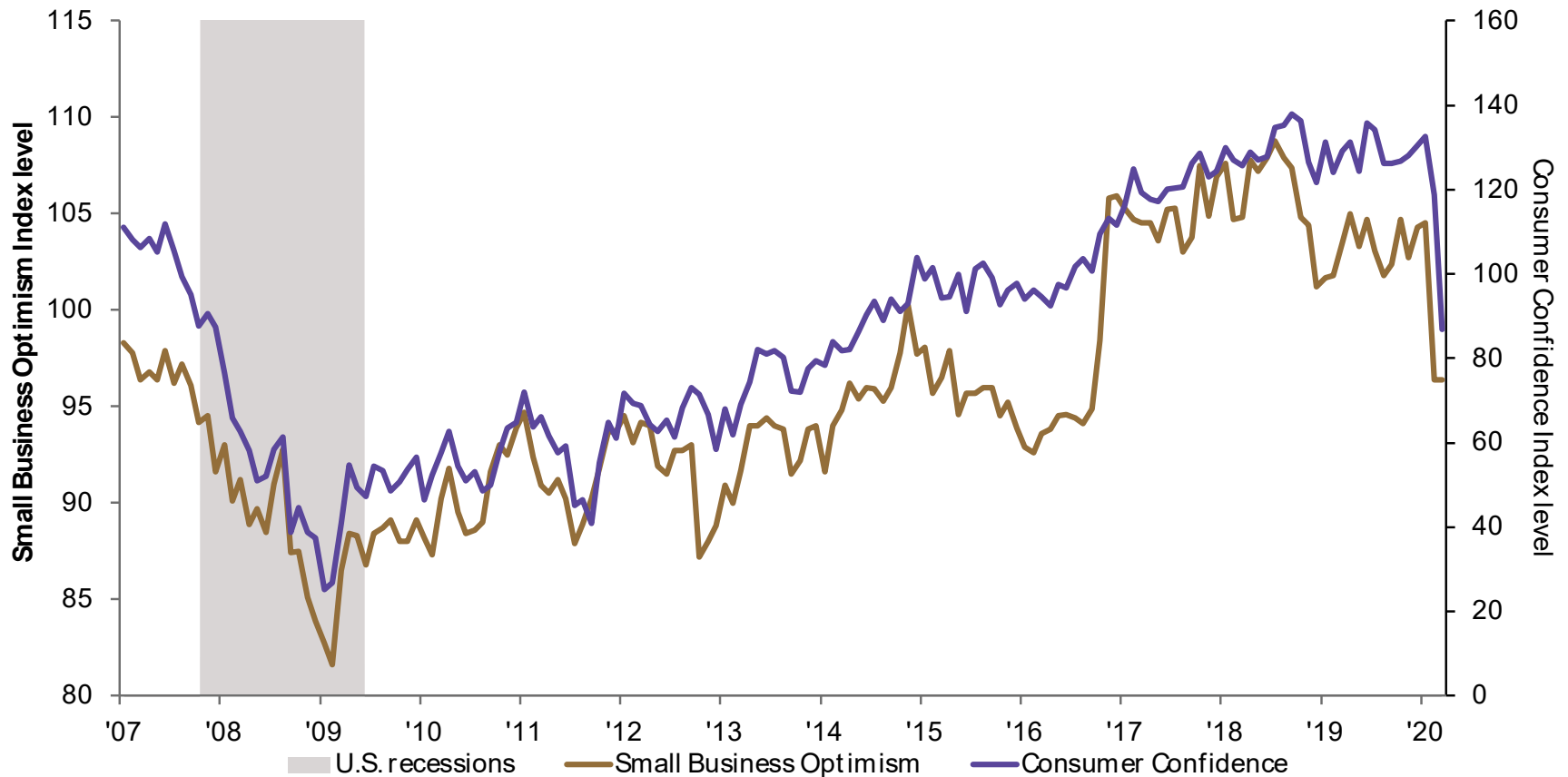
More jobs have been lost during the current recession than were created during the expansion



Source: Bureau of Labor Statistics, Bloomberg, and Wells Fargo Investment Institute. Data as of April 30, 2020.

# Consumer and business confidence tumble

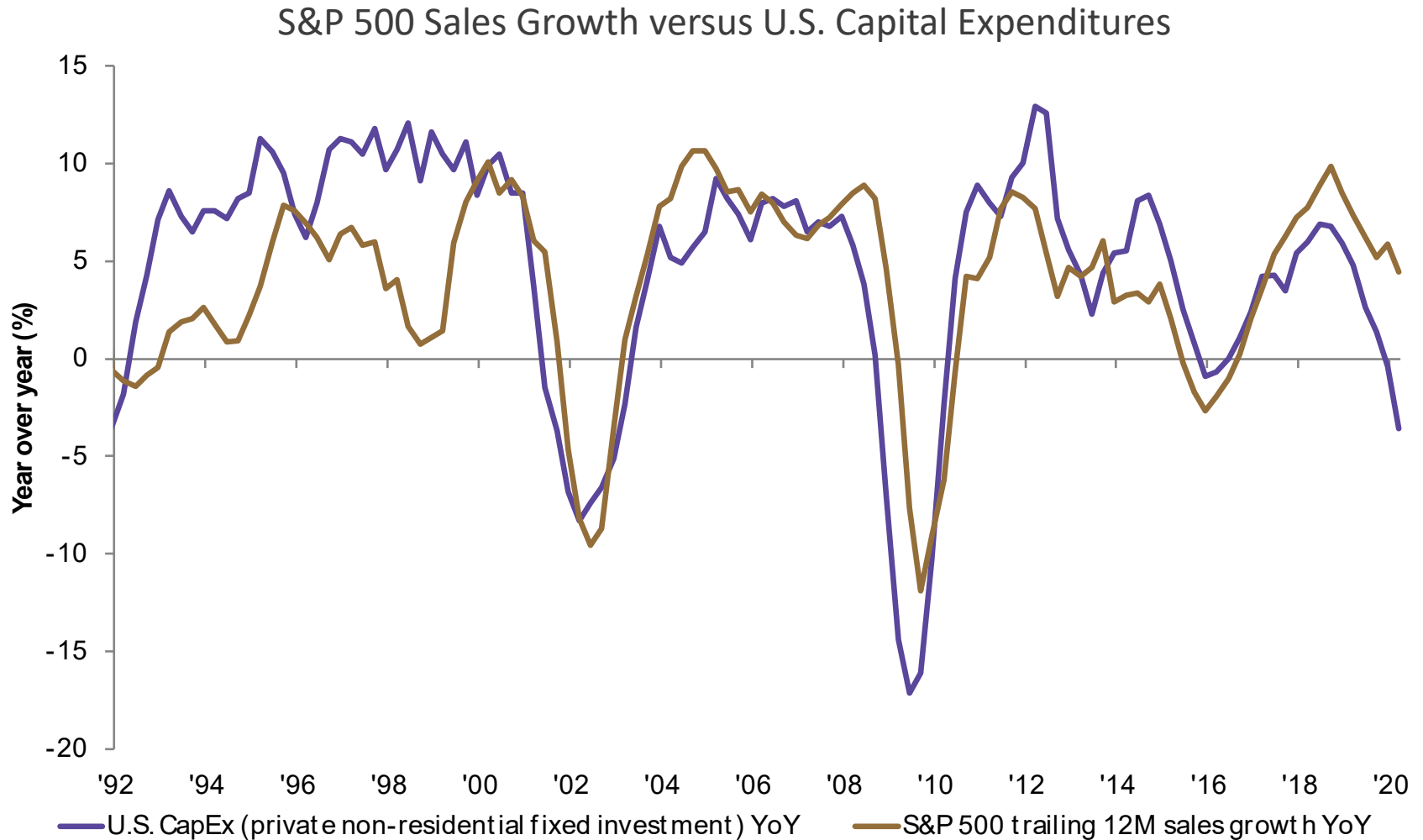
Confidence continues to fall as global growth and coronavirus concerns drag on sentiment



Source: Bloomberg; April 30, 2020. The shaded bar represents a recession period. The Conference Board Consumer Confidence Index® is a barometer of the health of the U.S. economy from the perspective of the consumer. The National Federation of Independent Business (NFIB) Small Business Optimism Index is a composite of ten seasonally adjusted components. It provides an indication of the health of small businesses in the U.S., which account of roughly 50% of the nation's private workforce.

# Capital spending has slowed

S&P 500 sales growth and Capital Expenditures continued to decline in the first quarter

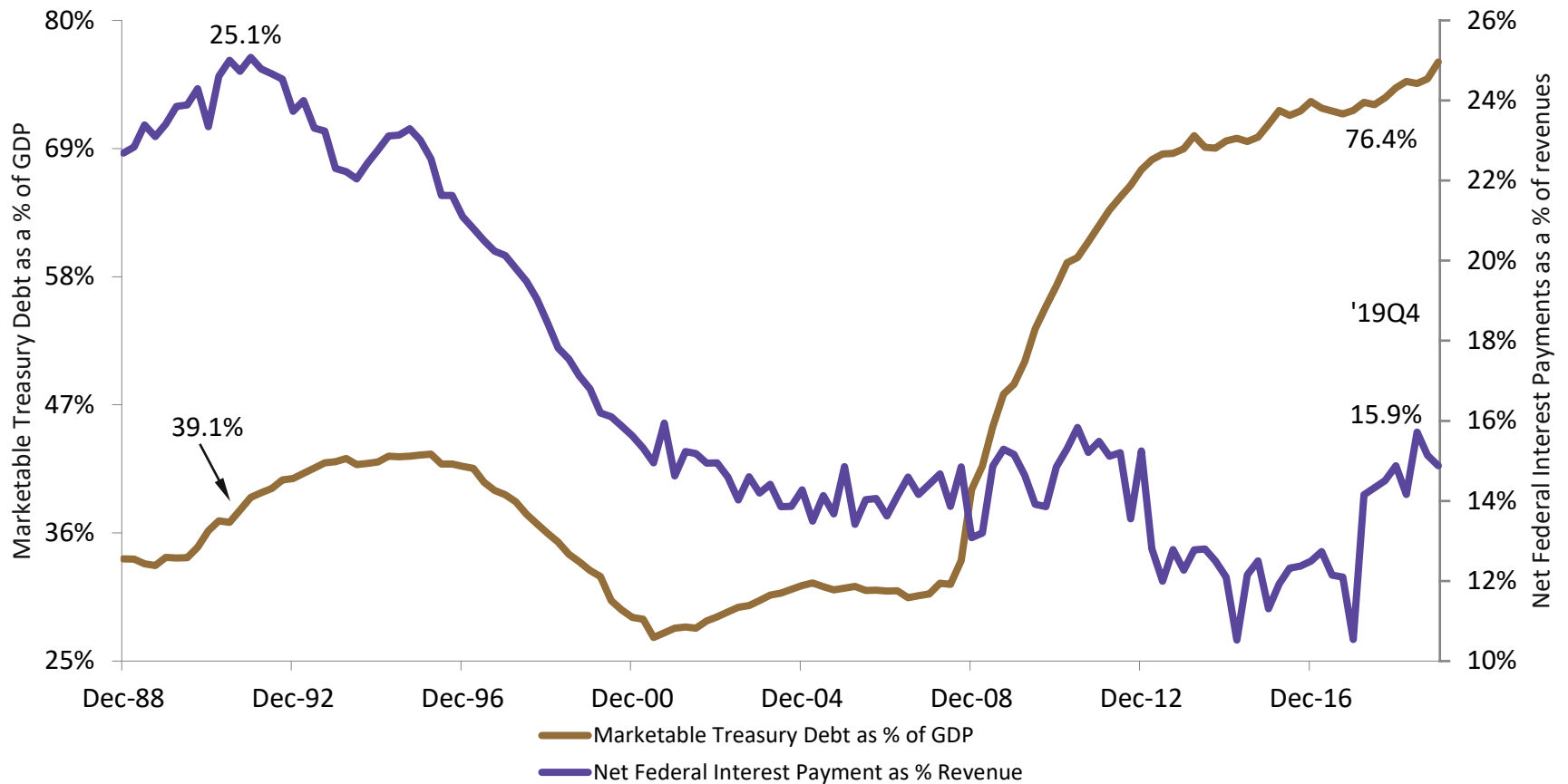


Source: Bloomberg, Bureau of Economic Analysis; March 31, 2020. Capex means capital expenditure and refers to funds spent by a company to buy, repair, update or improve a fixed company asset, such as a building, business or equipment. YoY=year over year.

# Federal debt service

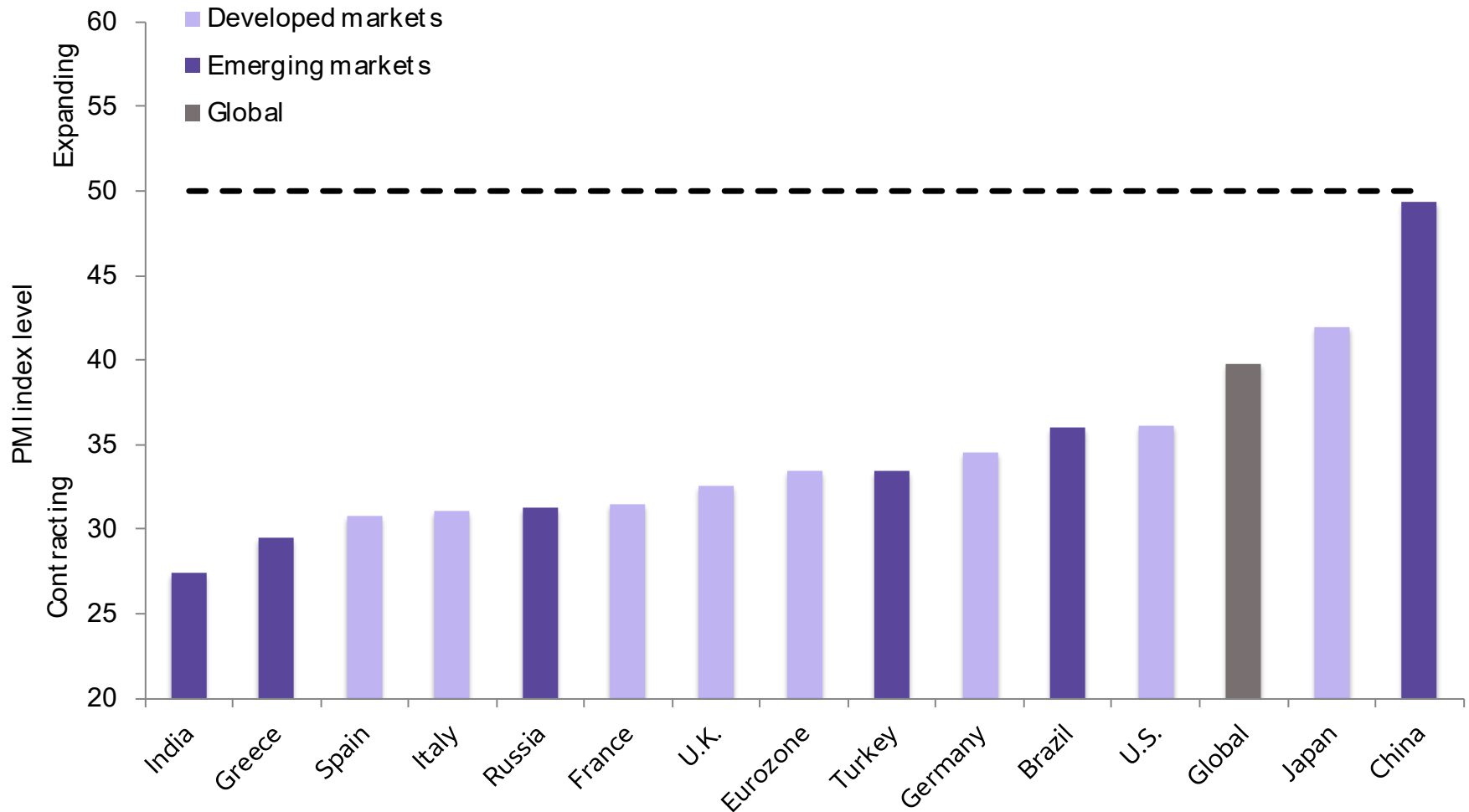
Lower interest rates suppress the federal debt payment burden even as outstanding debt soars

Treasury Debt as a % of GDP versus Net Federal Interest Payments as a % of Revenue



# Global manufacturing sentiment

Manufacturing sentiment is contracting in all major economies

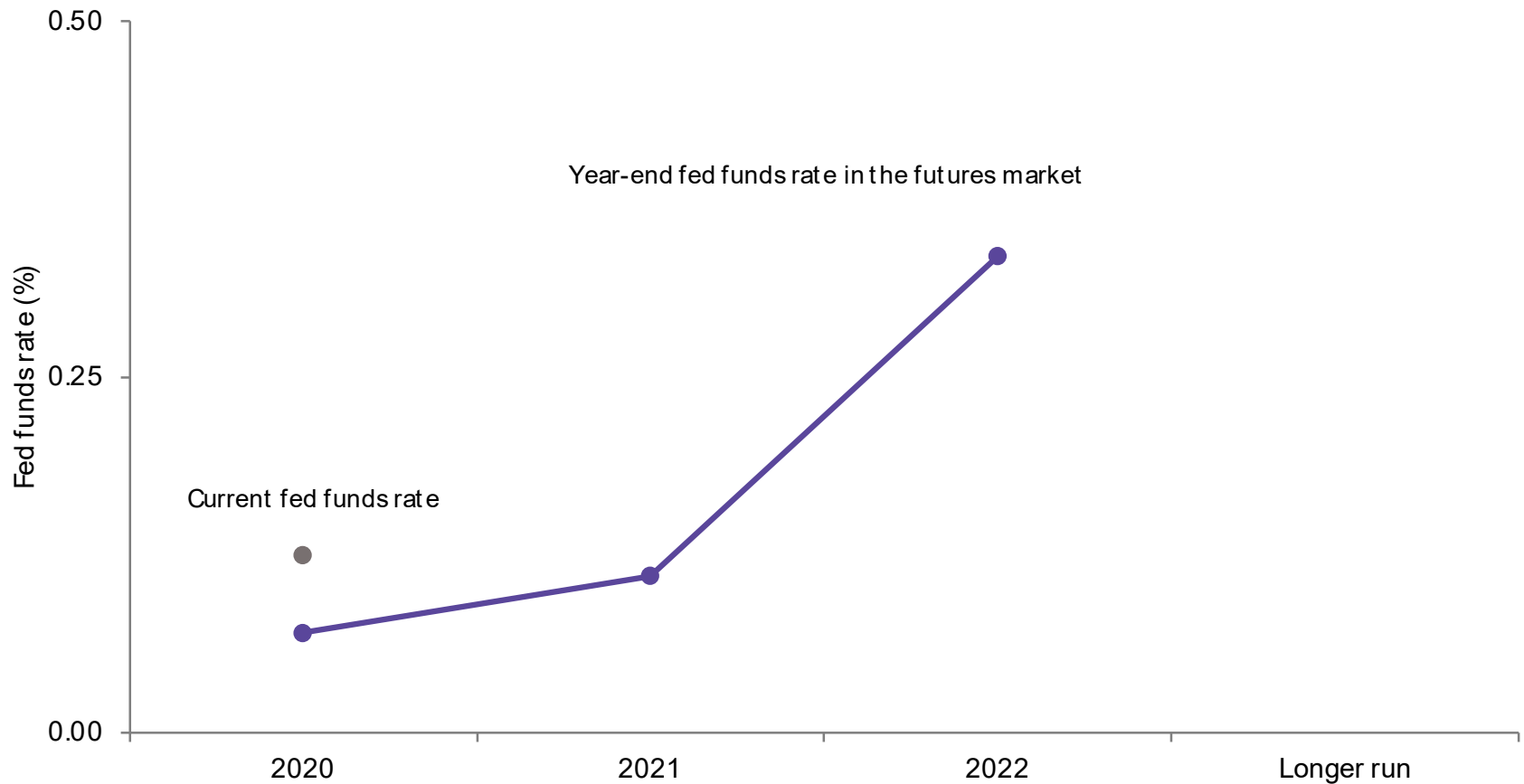


Source: Bloomberg, HSBC Markit; April 30, 2020. PMI = Purchasing Managers' Index (manufacturing). Purchasing Managers Index (PMI) is an indicator of the economic health of the manufacturing sector. The PMI index is based on five major indicators: new orders, inventory levels, production, supplier deliveries and the employment environment. Dotted line represents the threshold to signal expanding manufacturing sentiment.

# Interest rate expectations

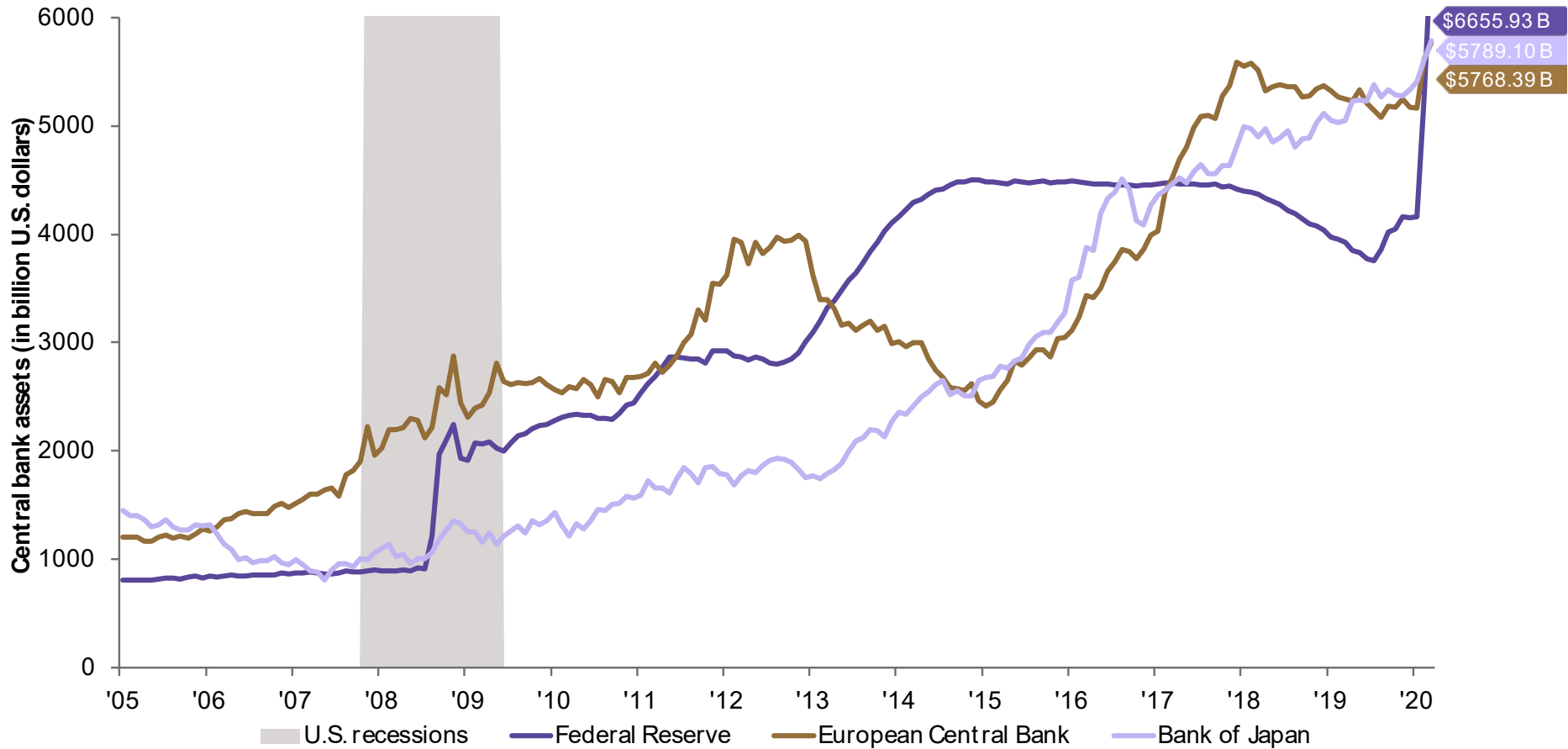
Market expects low rates through 2021

The Federal Reserve (Fed) cut rates to zero in 2020



# Central bank balance sheets

U.S. central bank assets have increased as the Fed injects more liquidity into the market



# Monetary policies have started to converge

The Federal Reserve cut rates to zero in 2020

## Global Central Bank monitor

	Real GDP*	Inflation rate*	Interest rate	Last move
<b>Developed countries</b>				
United States	(4.8)	0.3	0.00 – 0.25	03/20 (↓ 1.00)
Japan	0.7	0.4	(0.10) – 0.00	01/16 (↓ 0.20)
Eurozone	(3.3)	0.4	0.00	03/16 (↓ 0.05)
United Kingdom	1.4	1.5	0.10	04/20 (↓ 0.15)
Canada	1.6	0.9	0.25	04/20 (↓ 0.50)
<b>Emerging countries</b>				
China	(6.8)	3.3	4.35	11/15 (↓ 0.25)
India	6.1	5.8	4.40	03/20 (↓ 0.75)
Russia	1.7	3.1	5.50	05/20 (↓ 0.50)
Brazil	1.1	2.4	3.00	05/20 (↓ 0.75)
South Korea	1.3	0.1	0.75	10/19 (↓ 0.50)

Source: Bloomberg. \*Year-over-year growth rate. GDP=gross domestic product. Real GDP values are the quarter-over-quarter seasonally adjusted annual rate as of March 31, 2020. Inflation is as of April 30, 2020 except Japan, United Kingdom, and Canada which are as of March 31, 2020. Interest rates as of May 15, 2020.



# Today's agenda

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Investment strategies to consider in portfolios

# Equity outlook

	2020 year-end forecasts	2019	2018
S&P 500 Index	2670-2850	3231	2507
S&P 500 Index EPS	\$115	\$164	\$153
Russell Midcap Index	1710-1870	2382	1857
Russell 2000 Index	990-1130	1668	1349
MSCI EAFE Index	1370-1510	2037	1720
MSCI Emerging Markets Index	760-900	1115	966

Sources: FactSet, Bloomberg, Wells Fargo Investment Institute; April 30, 2020. 2020 year-end forecasts updated on May 15, 2020. All 2019 data is as of December 31, 2019. All 2018 data is as of December 31, 2018. Forecasts: Wells Fargo Investment Institute estimates. EPS = earnings per share.

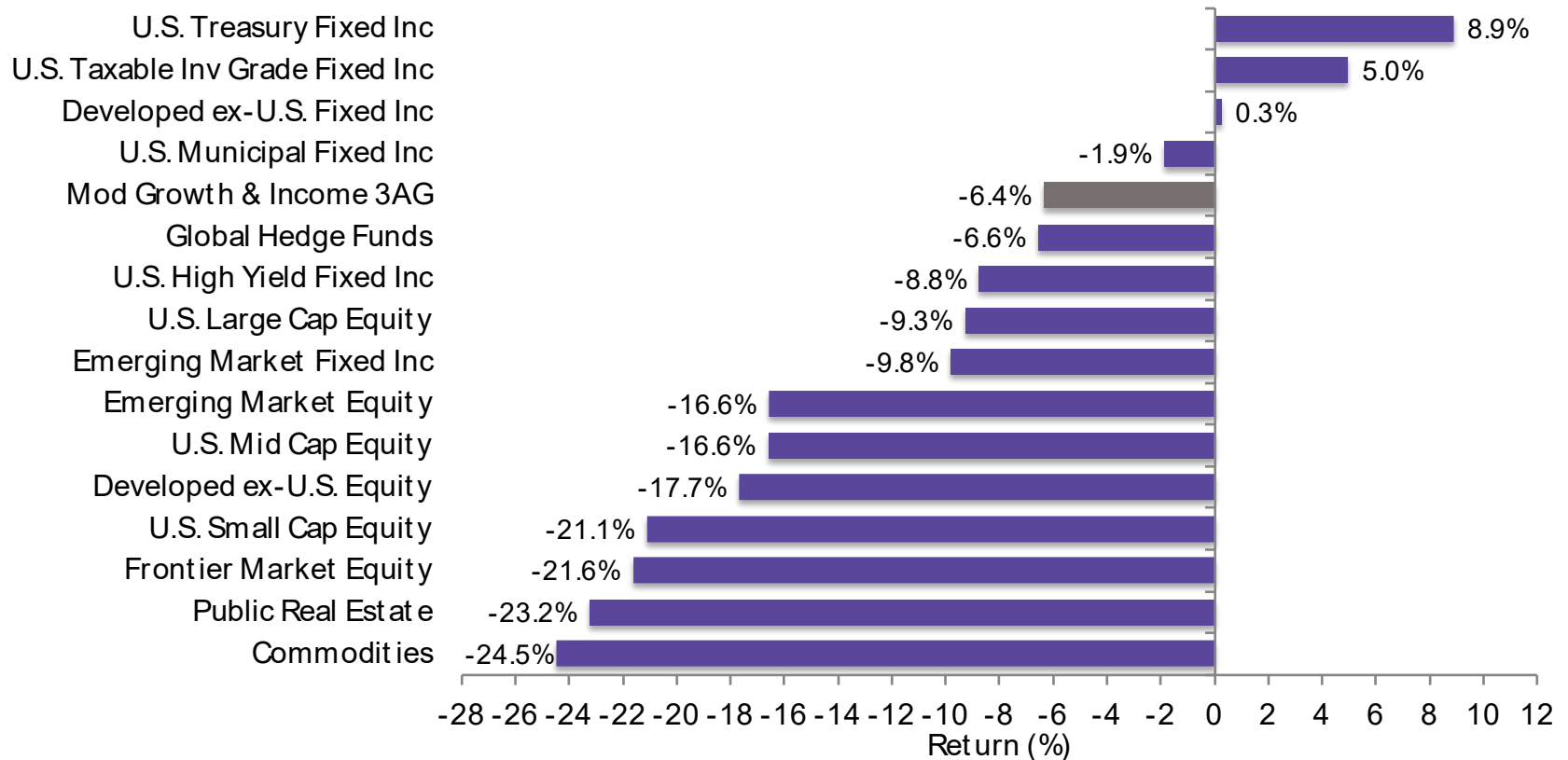
Forecasts and estimates are not guaranteed and based on certain assumptions and on our current views of market and economic conditions, which are subject to change.

An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

# Asset class performance

Fixed income asset classes outperformed equities YTD

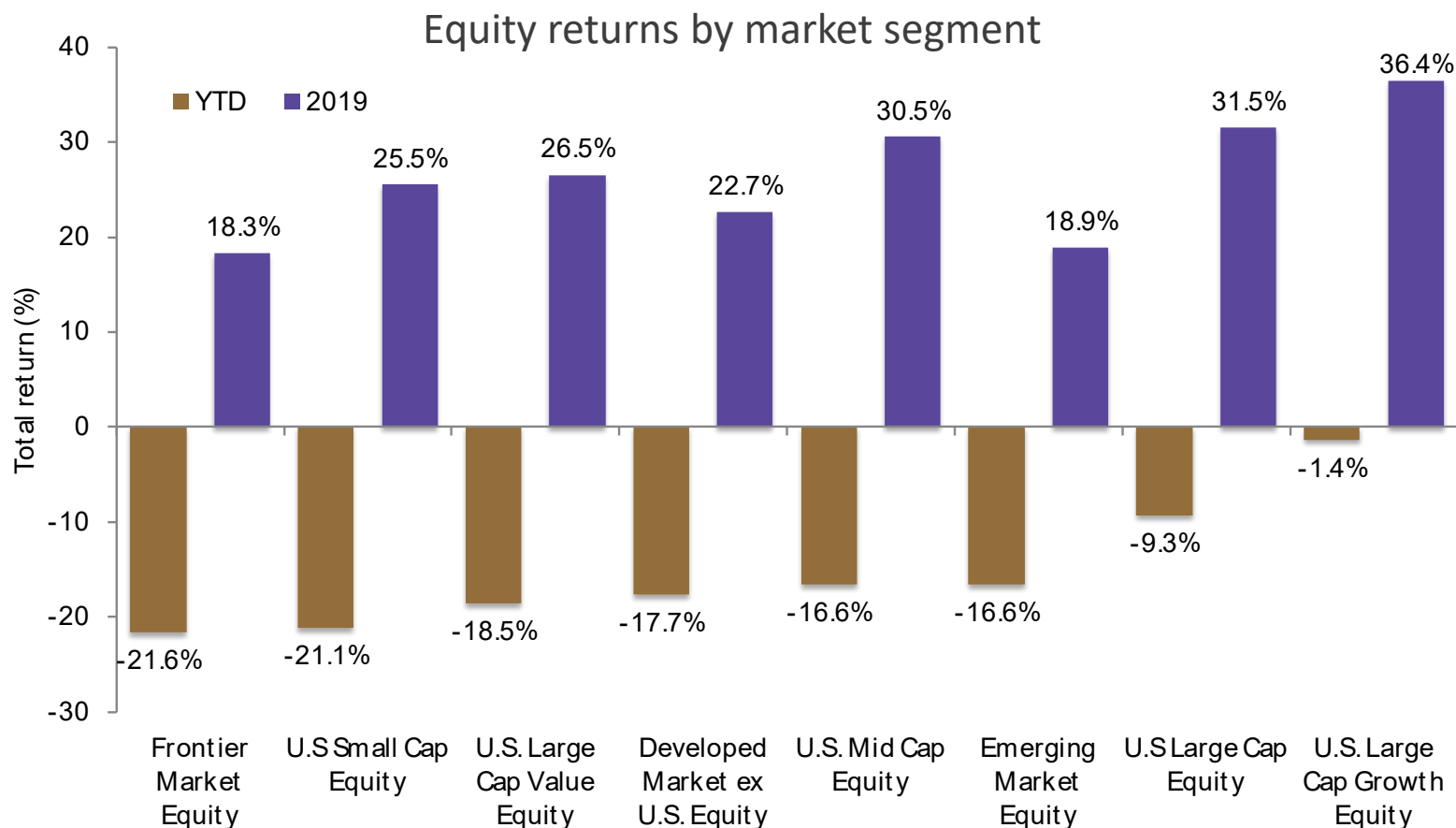
## YTD asset class total returns



Sources: Bloomberg, FactSet, Morningstar Direct. Total return as of April 30, 2020 except Global Hedge Funds, as of March 31, 2020. YTD=year-to-date. **Index return information is provided for illustrative purposes only. Performance results for the Moderate Growth & Income 3AG Portfolio are hypothetical. Index returns do not represent investment performance or the results of actual trading.** Index returns reflect general market results, assume the reinvestment of dividends and other distributions and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. Unlike most asset class indices, HFR Index returns reflect deduction for fees. Because the HFR indices are calculated based on information that is voluntarily provided actual returns may be higher or lower than those reported. **Hypothetical and past performance does not guarantee future results.** Composition of the Moderate Growth & Income 3AG Portfolio, the asset class risks associated with the representative asset classes and the definitions of the indices are provided at the end of the presentation.

# Equities

Large cap equities have outperformed the other equity asset classes



Sources: Bloomberg, FactSet, Morningstar Direct. Total return as of April 30, 2020. Emerging Market Equity: MSCI Emerging Markets Index; Frontier Market Equity: MSCI Frontier Markets Index; Developed Market ex U.S. Equity: MSCI EAFE Index; U.S. Large Cap Value: Russell 1000 Value Index; U.S. Small Cap Equity: Russell 2000 Index; U.S. Large Cap Equity: S&P 500 Index; U.S. Mid Cap Equity: Russell Midcap Index; U.S. Large Cap Growth Equity: Russell 1000 Growth Index. **Index return information is provided for illustrative purposes only. Index returns do not represent investment performance or the results of actual trading.** Index returns reflect general market results, assume the reinvestment of dividends and other distributions and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Past performance does not guarantee future results.** The asset class risks associated with the representative asset classes and the definitions of the indices are provided at the end of the presentation.

# Bear markets: historical perspective

The new bear has begun

## Bear market duration

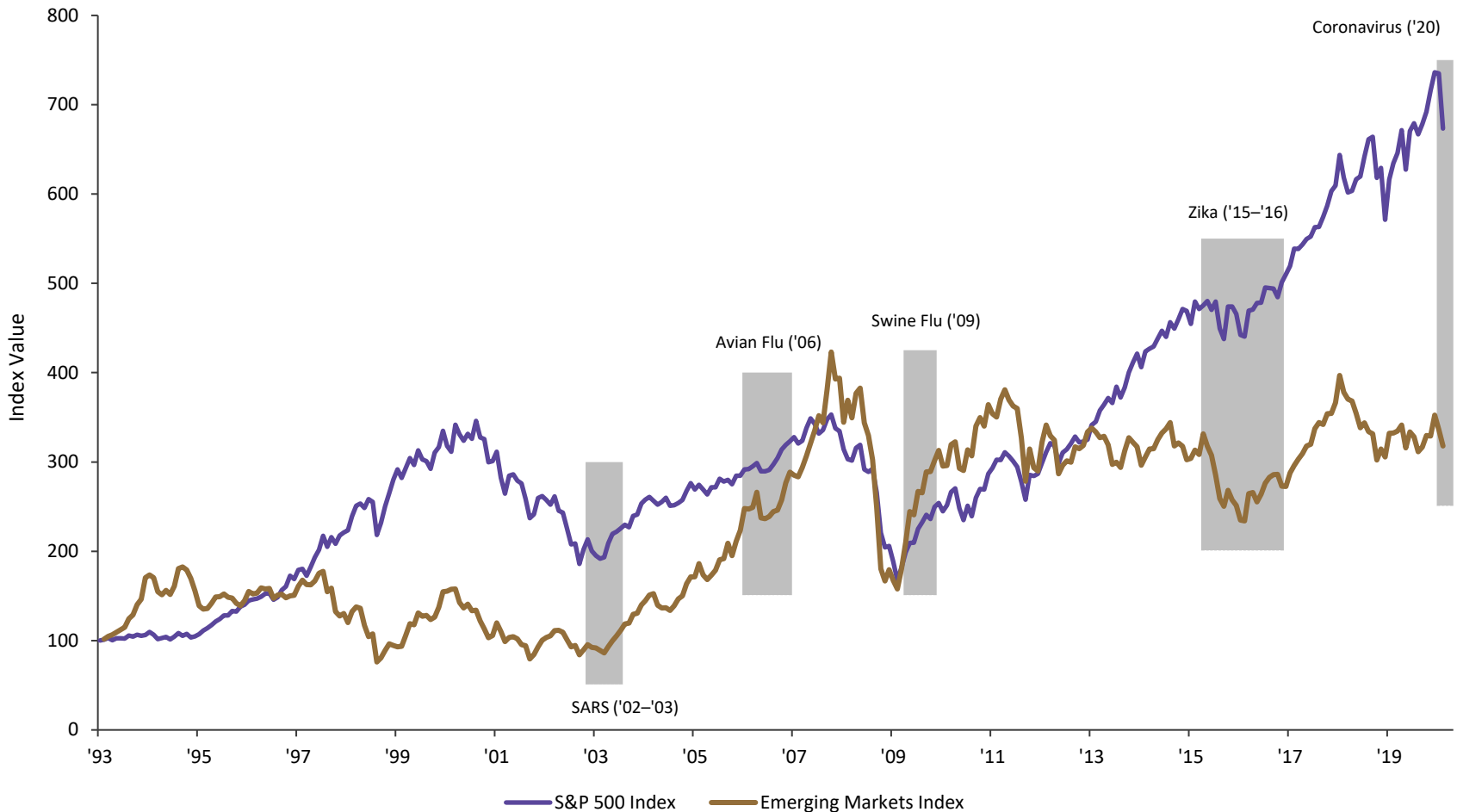
S&P 500 Index bear markets	Duration (months)	Decline (%)
September 7, 1929–June 1, 1932	32.8	-86
March 10, 1937–April 28, 1942	61.6	-60
May 29, 1946–June 13, 1949	36.5	-30
July 15–October 22, 1957	3.2	-21
December 12, 1961–June 26, 1962	6.5	-28
February 9–October 7, 1966	7.9	-22
November 29, 1968–May 26, 1970	17.9	-36
January 11, 1973–October 3, 1974	20.7	-48
November 28, 1980–August 12, 1982	20.5	-27
August 25–December 4, 1987	3.3	-34
July 16–October 11, 1990	2.8	-20
March 24, 2000–October 9, 2002	30.5	-49
October 9, 2007–March 9, 2009	17.0	-57
February 19, 2020–	1.1	-34
<b>Average</b>	<b>20.1</b>	<b>-39.8</b>

Source: Bloomberg and Wells Fargo Investment Institute, as of April 30, 2020. For illustrative purposes only. The S&P 500 Index is a market-capitalization-weighted index considered representative of the U.S. stock market. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

# Equities: Epidemics

S&P 500 Index vs. MSCI Emerging Markets Index performance during viral outbreaks

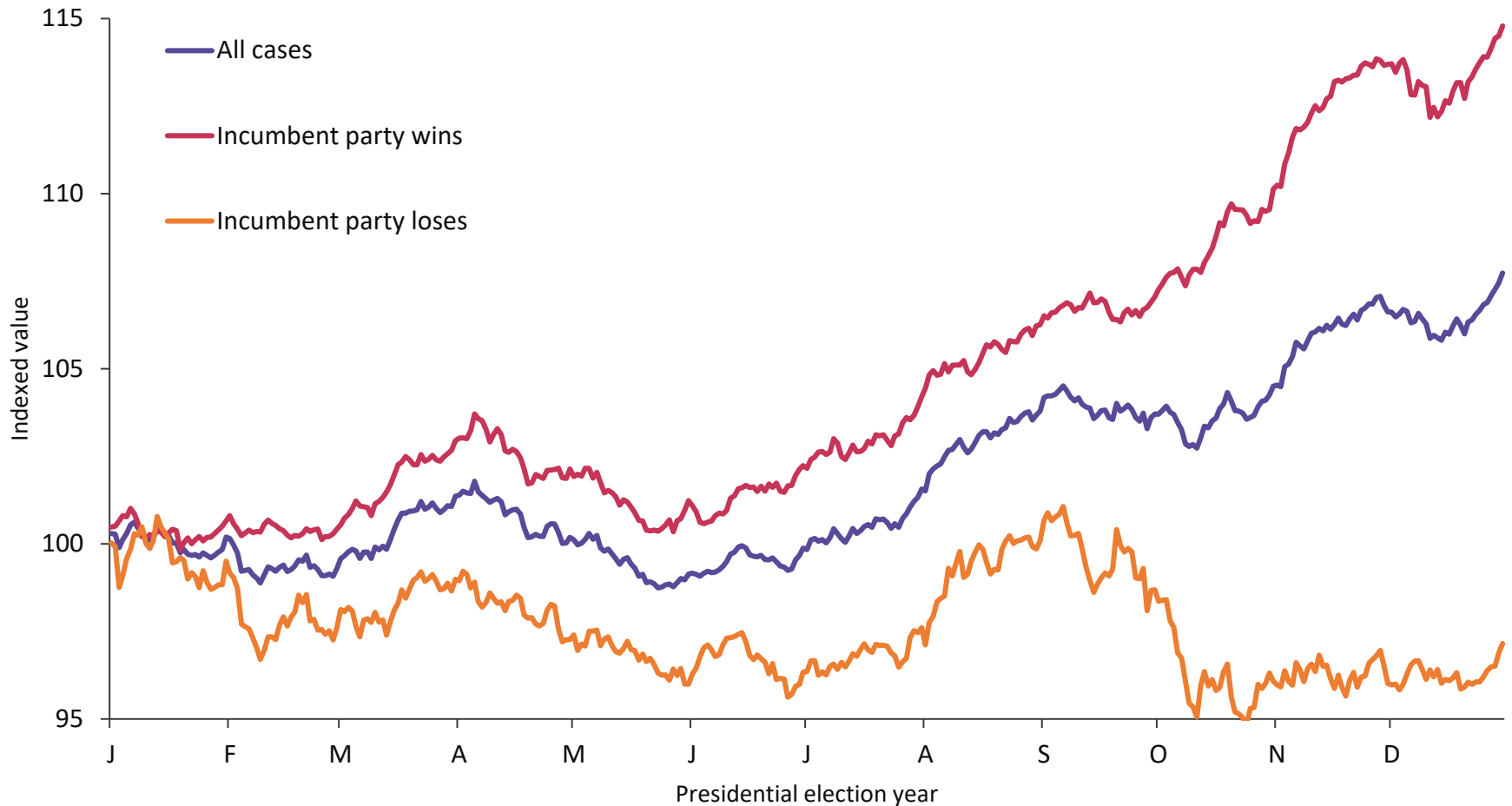
## Market performance during viral outbreaks



# U.S. equity market

Stock performance during presidential election years

## How stocks have behaved in presidential election years

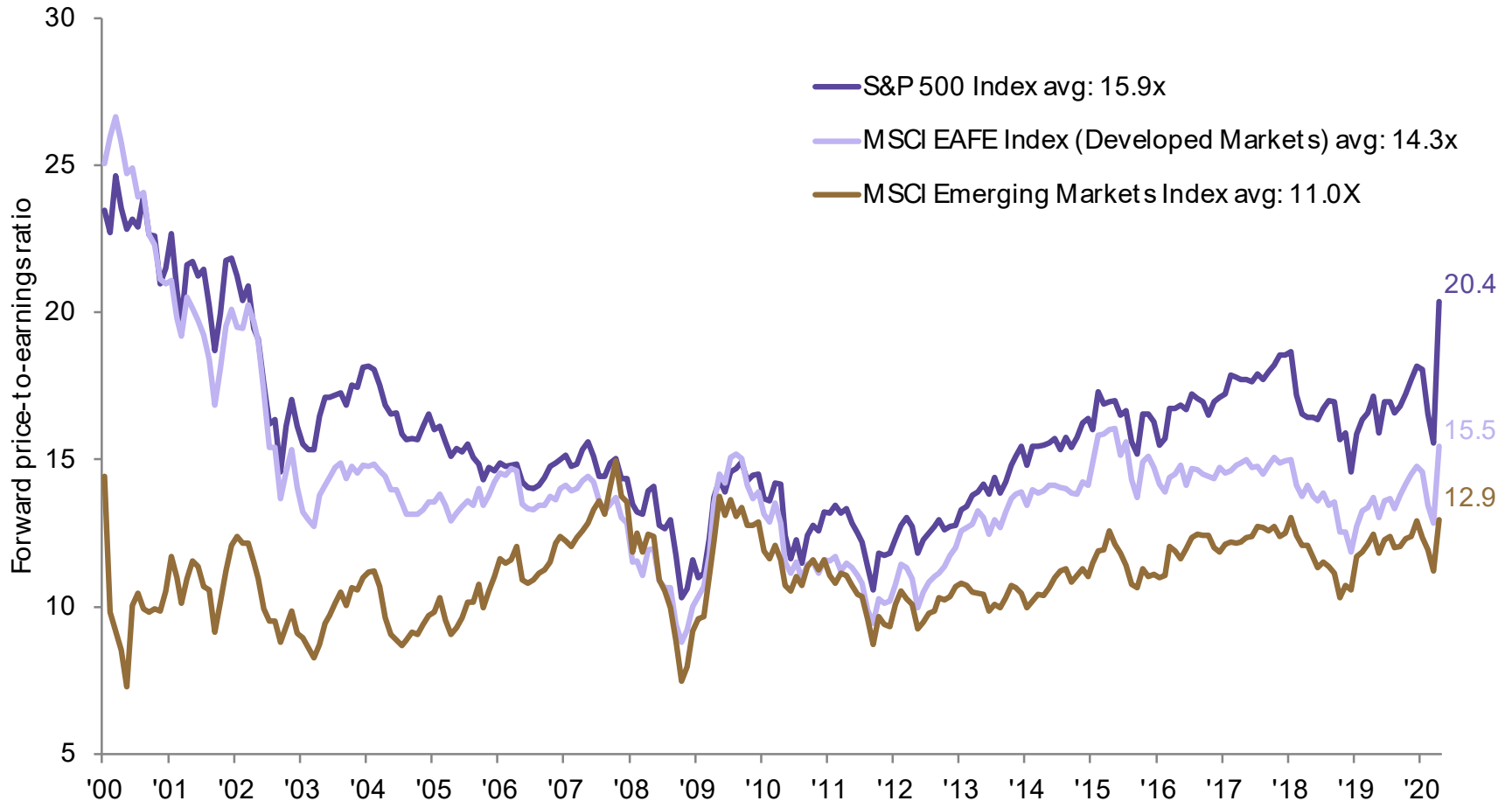


Source: Bloomberg, Wells Fargo Investment Institute. Indexed to 100 as of January 1 of each election year since 1900. Lines indicate the average performance. Stocks represented by the Dow Jones Industrial Average. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

# Global equity valuations: too much or not enough?

U.S. large cap price/earnings (P/E) ratios are above historical averages

## Global forward valuations

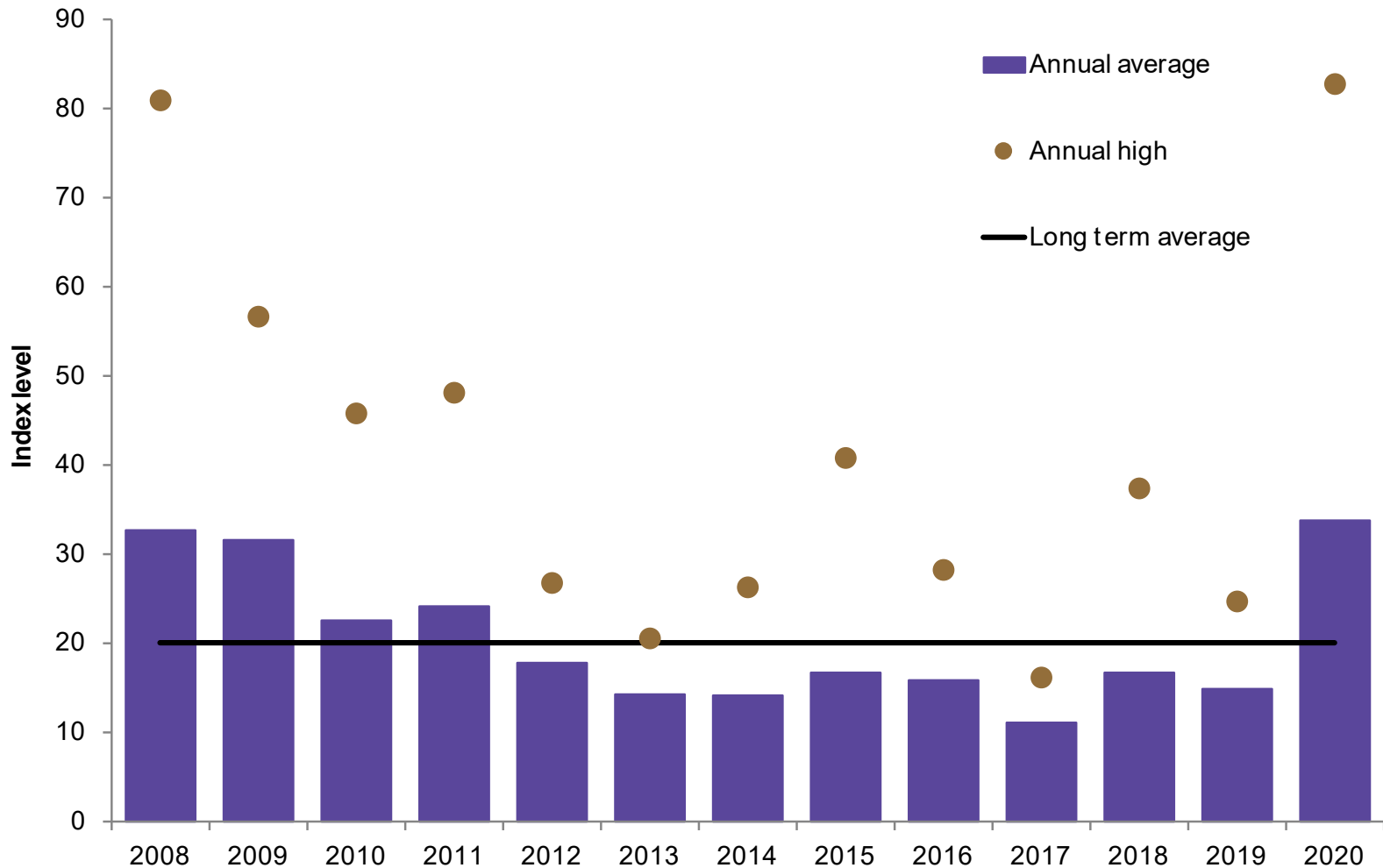




# Equity market volatility

Volatility decreased in April but remains above the long term average YTD

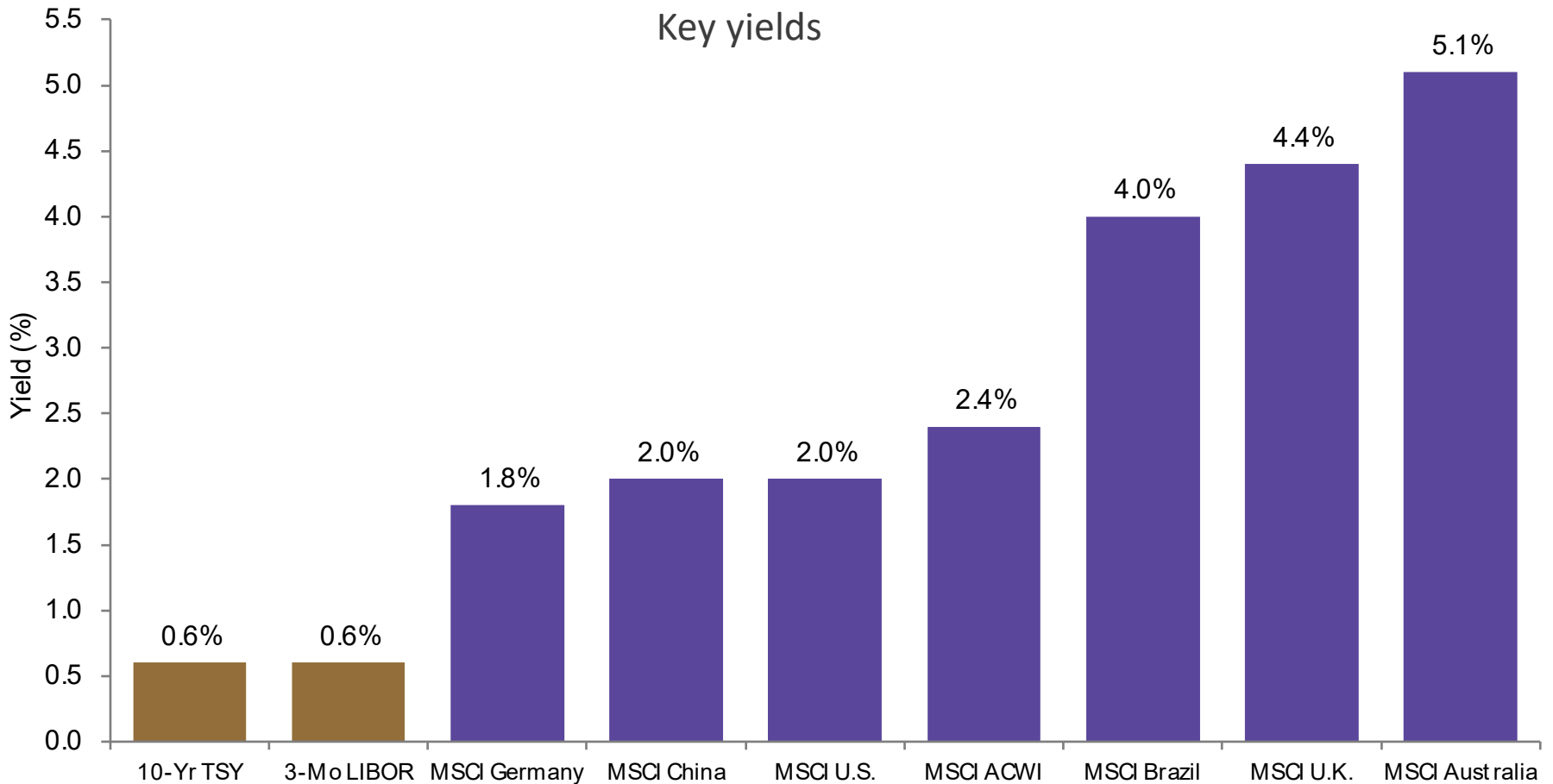
## VIX



Source: Bloomberg; April 30, 2020. The CBOE Volatility Index® (VIX®) is a key measure of market expectations of near-term volatility conveyed by S&P 500 stock index option prices. YTD= year to date. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

# Global dividend yields

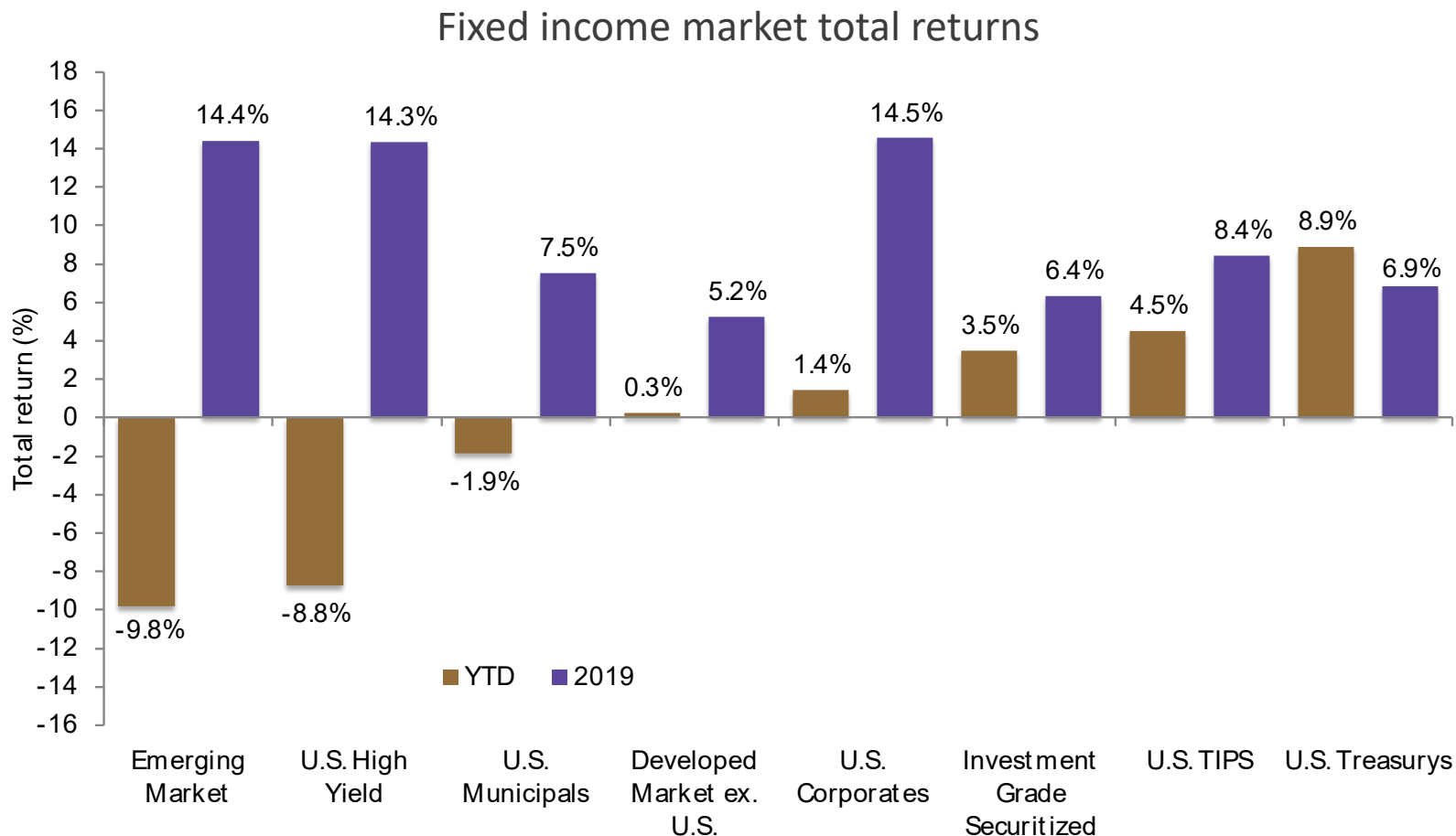
Bond yields are becoming less competitive with equity dividend yields



Source: FactSet; April 30, 2020. *For illustrative purposes only.* Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted. **Past performance is no guarantee of future results.** An index is unmanaged and not available for direct investment. Cash and sovereign bond yields represented in gold; equity dividend yields represented in purple. Cash is represented by 3-Mo LIBOR and sovereign bond yields are represented by the 10-Yr U.S. Treasury bond. The LIBOR USD 3 Month rate is an average derived from the quotations provided by the banks determined by the International Exchange Benchmark Administration. Definitions of the indices and descriptions of the risks associated with investment in these asset classes are provided at the end of the presentation.

# Fixed income

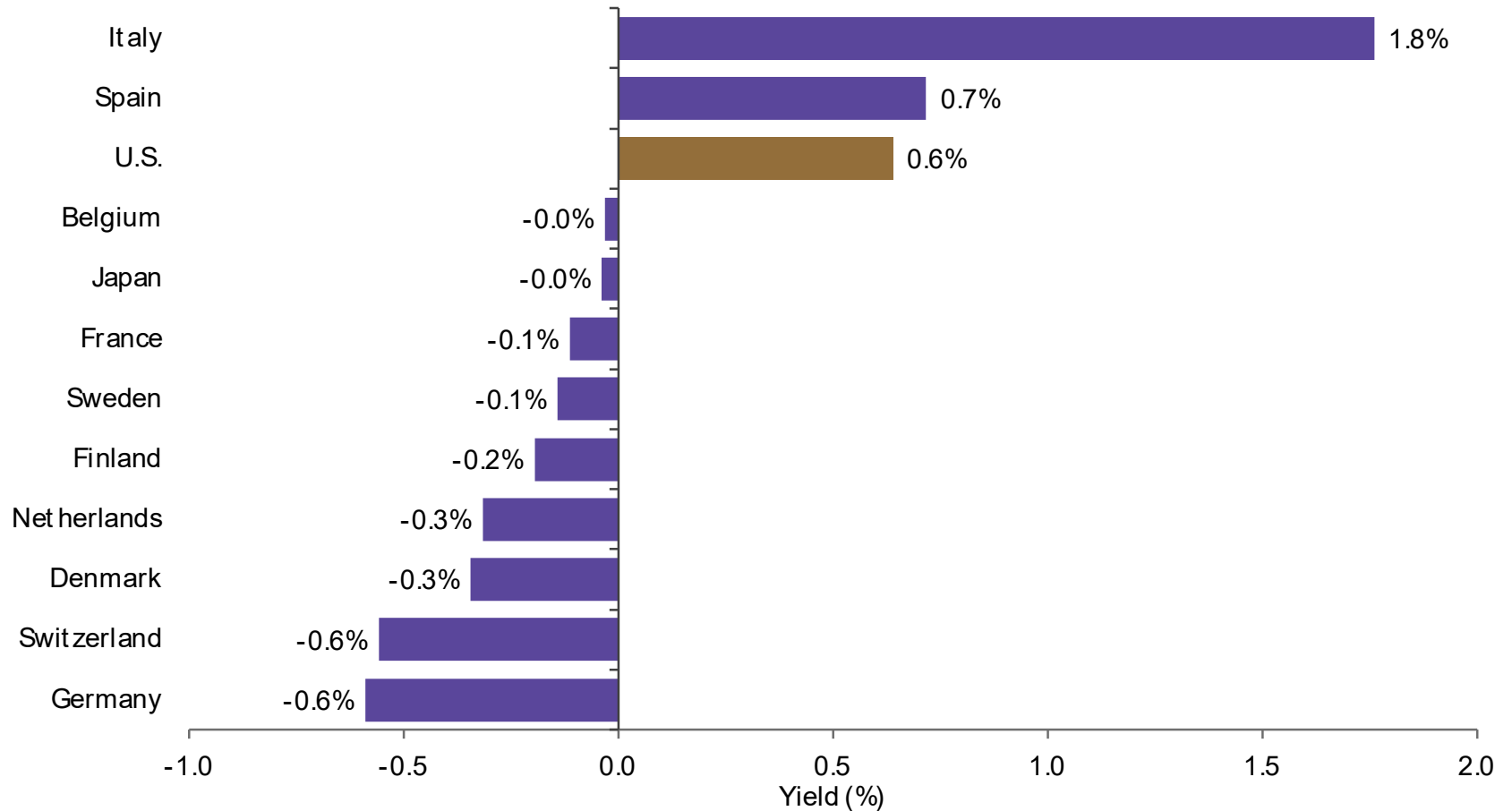
All asset classes are positive aside from Emerging Market, U.S. High Yield, and U.S. Municipals YTD



Source: FactSet. Total return as of April 30, 2020. YTD=year-to-date. Investment Grade Securitized: Bloomberg Barclays Mortgage Backed Securities Index; Developed Market ex U.S.: JPMorgan Global ex-U.S. Government Bond Index; U.S. Treasurys: Bloomberg Barclays Global U.S. Treasury Index; U.S. Municipals: Bloomberg Barclays U.S. Municipal Index; U.S. TIPS: Bloomberg Barclays U.S. TIPS Index; U.S. Corporates: Bloomberg Barclays U.S. Aggregate Corporate Bond Index; U.S. High Yield: Bloomberg Barclays U.S. Corporate High Yield Index; Emerging Market: JPMorgan Emerging Markets Bond Index. **Index return information is provided for illustrative purposes only. Index returns do not represent investment performance or the results of actual trading.** Index returns reflect general market results, assume the reinvestment of dividends and other distributions and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results. 2019.** Definitions of the indices and descriptions of the risks associated with investment in these asset classes are provided at the end of the presentation.

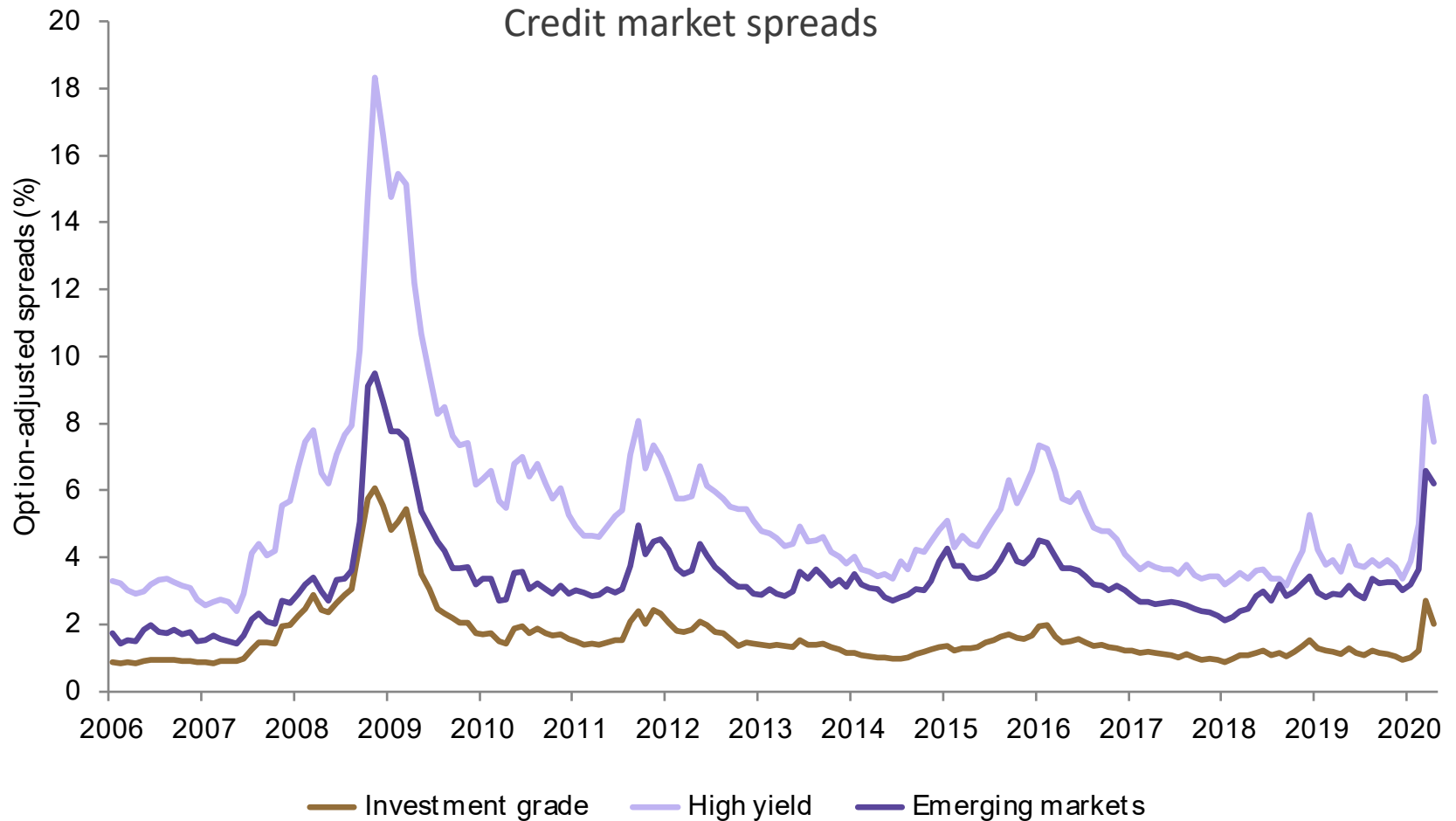
# Global 10-year bond yields

About 20% of debt outstanding in the global bond market is negatively yielding



# Credit markets

Credit spreads are off recent highs

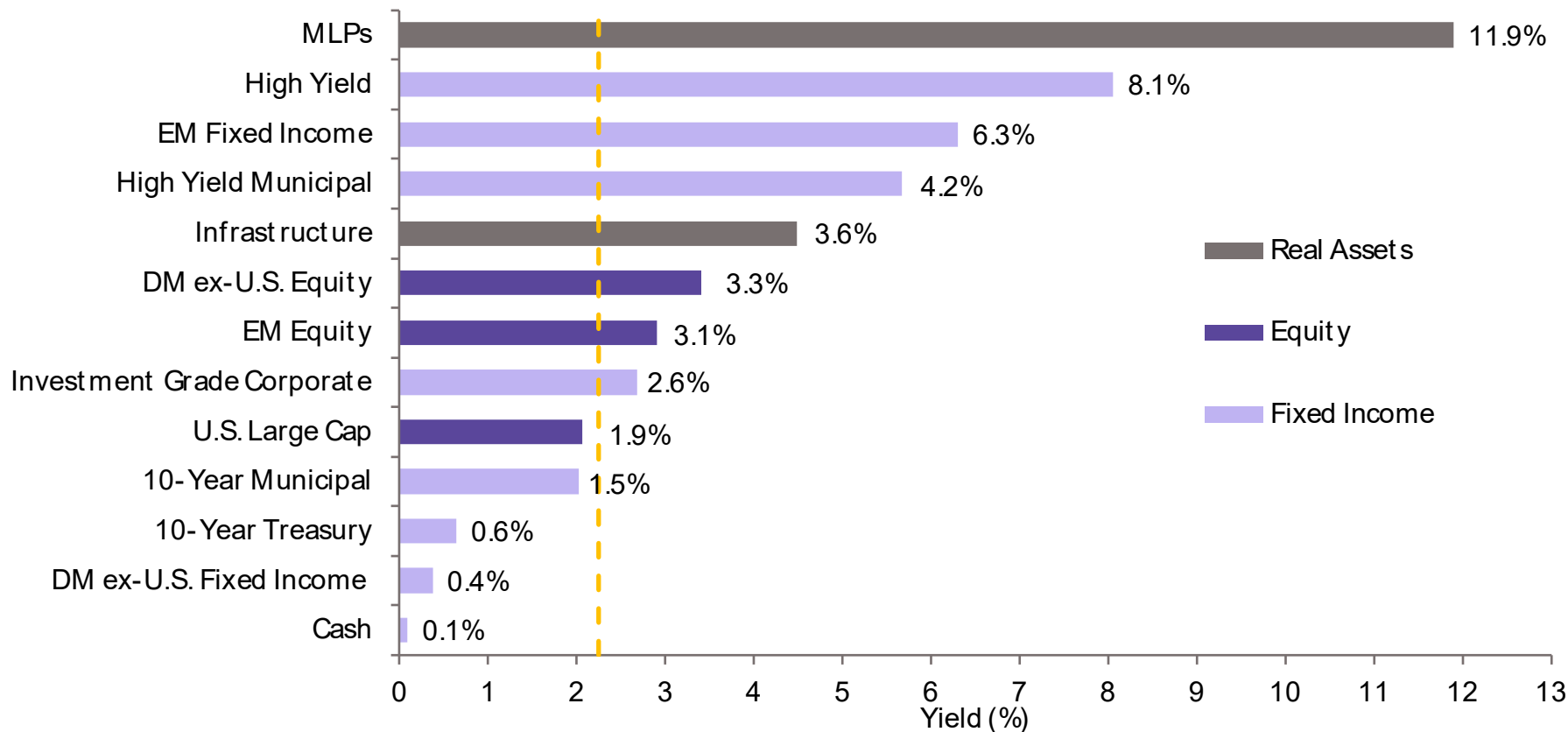


Source: Bloomberg; April 30, 2020. *For illustrative purposes only. Past performance is no guarantee of future results.* An index is unmanaged and not available for direct investment. Credit spreads are based on the Bloomberg Barclays U.S. Aggregate Corporate Bond Index, Bloomberg Barclays U.S. Corporate High Yield Index, and Bloomberg Barclays Emerging Market Bond Index. The data shown represents the yield differential between the indexes and their comparable maturity U.S. Treasury security, adjusted for the effects of embedded options, a call feature in which the issuer retains the right to retire the debt, fully or partially before the scheduled maturity. Definitions of the indices and descriptions of the risks associated with investment in these asset classes are provided at the end of the presentation.

# Real assets

MLPs and Infrastructure provide an attractive yield in a low interest rate environment

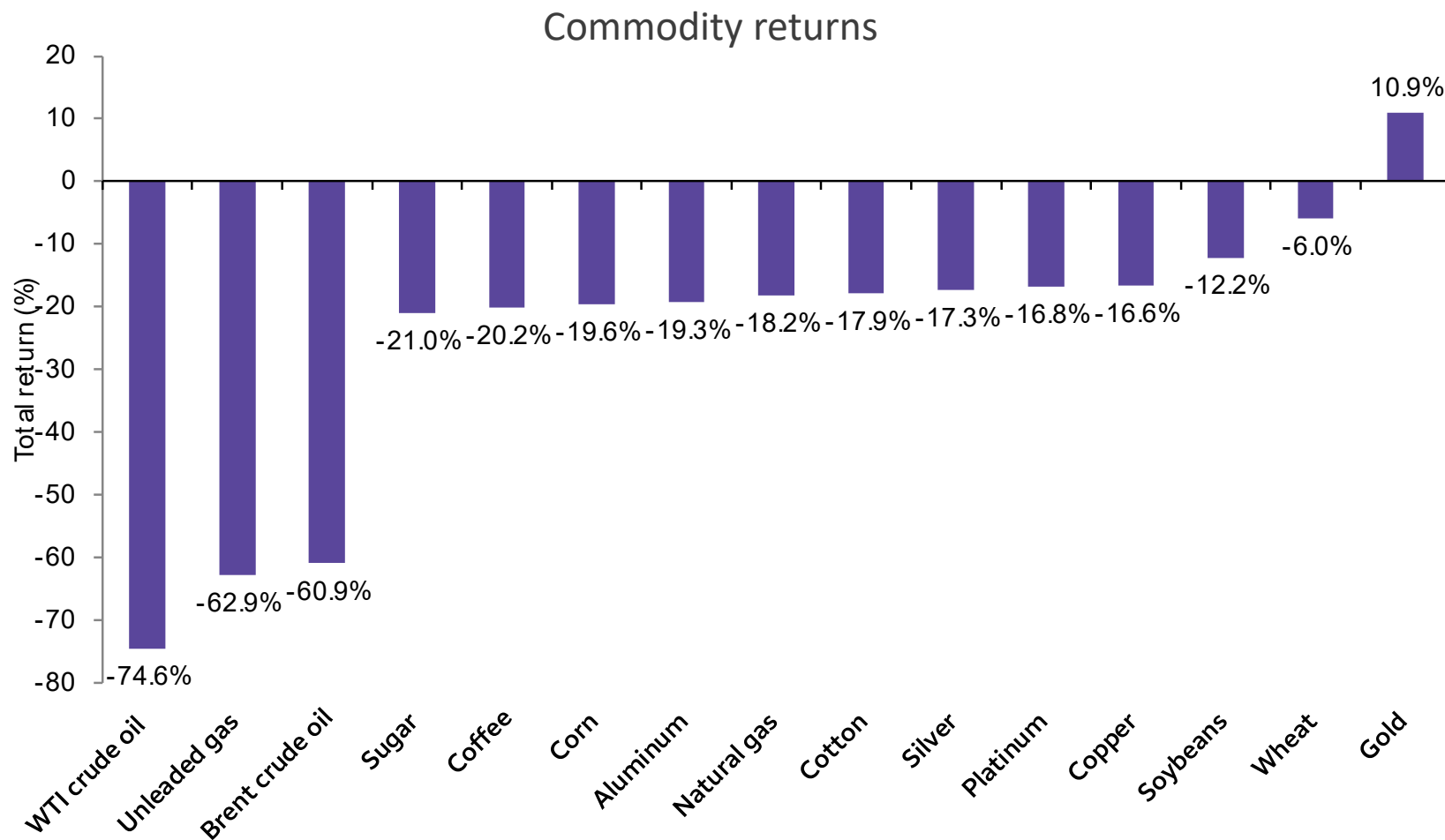
## Income from real assets vs fixed income and equity yields



Source: Bloomberg; April 30, 2020. DM = developed market. EM = emerging market. MLPs = master limited partnerships. MLPs: Alerian MLP Index, High Yield: Bloomberg Barclays U.S. Corporate High Yield Bond Index, Emerging Market: J.P. Morgan EMBI Global Index, Infrastructure: S&P Global Infrastructure Index, High Yield Municipal: Bloomberg Barclays U.S. Municipal High Yield Index, DM ex-U.S. Equity: MSCI EAFE Index, EM Equity: MSCI Emerging Markets Index, Investment Grade Corporate: Bloomberg Barclays U.S. Corporate Bond Index, U.S. Large Cap: S&P 500 Index, Cash: Bloomberg Barclays US Treasury Bills (1-3M) Index, and Developed Market ex-U.S.: J.P. Morgan GBI Global Ex U.S. Index. *For illustrative purposes only.* Yields represent past performance and will fluctuate as market conditions change. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of this presentation for the definitions of the 30 indices and a description of the asset class risks.

# Real assets

Gold outperformed YTD, elevated on geopolitical and coronavirus uncertainties



Source: Bloomberg. Total return as of April 30, 2020. YTD=year-to-date. Commodities represented by the sub indexes of the Bloomberg Commodity Index. *For illustrative purposes only. Index returns do not represent investment performance or the results of actual trading.* Index returns represent general market results, assume the reinvestment of dividends and other distributions, and do not reflect the deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of this presentation for the definitions of the indices and a description of the asset class risks.

# Inverse relationship: Oil price could prompt rising spreads

BBB spreads remain below levels of the last oil crash in 2015-2016

## Global oil supply and demand

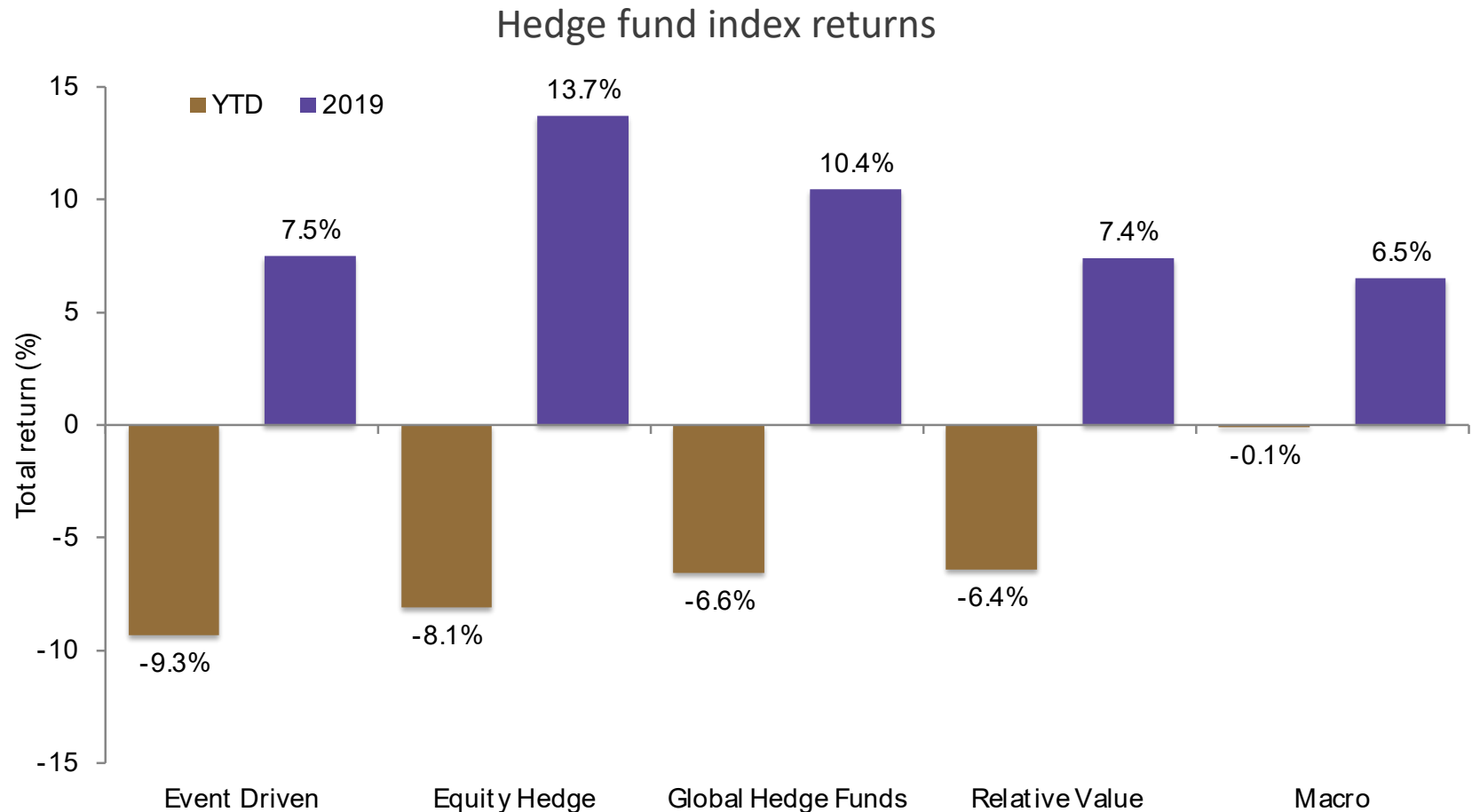


Source: Bloomberg and Wells Fargo Investment Institute. Data as of April 30, 2020. WTI=West Texas Intermediate. BBB Spreads are defined as the incremental spread between US Corporate BBB yield and 10-year Treasury yield.



# Alternative investments

Macro strategies have outperformed YTD



Source: HFRI, Bloomberg. Total return as of April 30, 2020. YTD=year-to-date. **Alternative Investments, such as hedge funds are not suitable for all investors. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program.** For illustrative purposes only. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. Unlike most asset class indices, HFR Index returns reflect deduction for fees. Because the HFR indices are calculated based on information that is voluntarily provided actual returns may be higher or lower than those reported. **Past performance is no guarantee of future results.** Please see the end of this presentation for the definitions of the indices and a description of the asset class risks.

## Where Wells Fargo Investment Institute (WFII) differs from consensus

- We are favorable on the S&P 500 Information Technology, Communication Services, Consumer Discretionary, Health Care, and Financials sectors, based on their high-quality characteristics.
- We are below consensus for Large Cap earnings per share (EPS) at \$115 for 2020, compared with a consensus estimate of \$129.
- Consensus estimates Small Cap EPS is \$44 compared to our \$30; consensus Emerging Market EPS is \$67 compared to our \$50.
- In February 2020, we upped our year-end 2020 target for gold over and above our already bullish target previously released in December 2019. We upped our target again in April. Our new target reflects a much more positive outlook for the price of gold than consensus.
- The coronavirus outbreak and the efforts to contain it decimated the demand outlook for oil. Then the spat between Saudi Arabia and Russia crashed prices further. We were quick to react to the new supply/demand dynamic and lowered our oil targets.
- We believe that the commodity price collapse associated with the oil-price drop and coronavirus-associated demand destruction provided an attractive tactical opportunity. We upgraded commodities to favorable in mid-March.

## Key points

In our view:

- We anticipate an economic contraction of -5.5 percent in the U.S. and -3.3 percent globally in 2020.
- We believe that the U.S. economy was on good footing prior to the coronavirus outbreak. We expect the virus to cause a short, but deep recession in the second quarter of 2020.
- The Federal Reserve cut interest rates to zero in 2020. We expect them to remain accommodative through year-end.
- While we expect equity prices to rise from current levels, the ride likely will be bumpy.
- We suggest investors remain invested and look for opportunities in the midst of volatility.

# Today's agenda

Where are we in this economic cycle?

Where are we in this market?

Investment strategies to consider in portfolios

# Tactical strategy

- We believe all investors should establish their strategic asset allocation.
- Some investors may want to make tactical adjustments to potentially take advantage of short-term market trends.

Global fixed income		Global real assets	
Cash Alternatives	Neutral	Private Real Estate*	Unfavorable
U.S. Taxable Investment Grade FI	Favorable	Infrastructure	Neutral
U.S. Short Term Taxable FI	Neutral	Commodities	Favorable
Global equity		Global alternative investments*	
U.S. Intermediate Term Taxable FI	Favorable	Hedge Funds—Relative Value	Neutral
U.S. Long Term Taxable FI	Neutral	Hedge Funds—Macro	Neutral
U.S. High Yield FI	Neutral	Hedge Funds—Event Driven	Neutral
Developed Market Ex.-U.S. FI	Unfavorable	Hedge Funds—Equity Hedge	Favorable
Emerging Market FI	Neutral	Private Debt	Favorable
U.S. Large Cap Equity	Favorable	Private Equity	Neutral
U.S. Mid Cap Equity	Favorable		
U.S. Small Cap Equity	Most Unfavorable		
Developed Market Ex.-U.S. Equity	Unfavorable		
Developed Market Ex.-U.S. Small Cap Equity	Unfavorable		
Emerging Market Equity	Unfavorable		
Frontier Market Equity	Unfavorable		

Because of the illiquid and complex nature of private placement hedge funds, Wells Fargo Investment Institute will no longer provide tactical percentage guidance for these asset classes. We will instead provide guidance that may be incorporated into portfolios over a longer period of time.

Source: Wells Fargo Investment Institute, April 30, 2020. **Boldface** indicates the most recent changes.

\*Alternative investments, such as hedge funds, private capital and private real estate funds are not suitable for all investors and are only open to “accredited” or “qualified” investors within the meaning of the U.S. securities laws. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program.

# Tactical strategy

- We believe all investors should establish their strategic asset allocation.
- Some investors may want to make tactical adjustments to potentially take advantage of short-term market trends.

S&P sector strategy	
Communication Services	Favorable
Consumer Discretionary	Favorable
Consumer Staples	Neutral
Energy	<b>Most Unfavorable</b>
Financials	Favorable
Health Care	Favorable
Industrials	Unfavorable
Information Technology	Most Favorable
Materials	<b>Most Unfavorable</b>
Real Estate	<b>Unfavorable</b>
Utilities	Neutral

International equity strategy by region	
Europe Region	Unfavorable
Pacific Region	Unfavorable
Emerging Asia	Unfavorable
Emerging Europe, Middle East and Africa Region	Unfavorable
Latin America Region	Unfavorable

Style strategy	
Growth	Neutral
Value	Neutral

Source: Wells Fargo Investment Institute, April 30, 2020. **Boldface** indicates the most recent changes.

Strategic asset allocation does not guarantee investment returns or eliminate risk of loss.

# Tactical strategy

- We believe all investors should establish their strategic asset allocation.
- Some investors may want to make tactical adjustments to potentially take advantage of short-term market trends.

Fixed income sector strategy	
Duration	Neutral
U.S. Government	<b>Unfavorable</b>
Credit	Favorable
Securitized	Favorable

Tax-exempt sector strategy	
Taxable Municipal	Neutral
State and Local General Obligation	Neutral
Essential Service Revenue	Favorable
Pre-Refunded	Neutral

Taxable sector strategy	
Treasury Securities	<b>Unfavorable</b>
Agencies	Neutral
Inflation-Linked Fixed Income	Neutral
Corporate Securities	Favorable
Preferred Securities	Favorable
Residential MBS	Favorable
Commercial MBS	Neutral
Asset Backed Securities	Neutral

Source: Wells Fargo Investment Institute, April 30, 2020. **Boldface** indicates the most recent changes.

Strategic asset allocation does not guarantee investment returns or eliminate risk of loss.

# Risk disclosures

## Composition:

**Moderate Growth and Income 3AG Portfolio:** 3% Bloomberg Barclays U.S. Treasury Bills (1–3 Month) Index , 4% Bloomberg Barclays U.S. Aggregate 1–3 Year Bond Index, 21% Bloomberg Barclays U.S. Aggregate 5–7 Year Bond Index, 7% Bloomberg Barclays U.S. Aggregate 10+ Year Bond Index, 6% Bloomberg Barclays U.S. Corporate High Yield Bond Index, 5% JPM EMBI Global Index, 21% S&P 500 Index, 12% Russell Mid Cap Index, 8% Russell 2000 Index, 6% MSCI EAFE Index, 7% MSCI Emerging Markets Index.

## Asset Class Risks:

*Each asset class has its own risk and return characteristics. The level of risk associated with a particular investment or asset class generally correlates with the level of return the investment or asset class might achieve. All investing involves risk including the possible loss of principal.*

**Stocks** offer long-term growth potential, but may fluctuate more and provide less current income than other investments. **Small and mid-sized company stocks** involve greater risks than those customarily associated with larger companies. They often involve higher risks because of smaller and mid-sized companies may lack the management expertise, financial resources, product diversification and competitive strengths to endure adverse economic conditions. **Bonds** are subject to interest rate, credit/default, liquidity, inflation and other risks. Prices tend to be inversely affected by changes in interest rates. **High yield fixed income** securities are considered speculative, involve greater risk of default, and tend to be more volatile than investment grade fixed income securities. **Municipal bonds** offer interest payments exempt from federal taxes, and potentially state and local income taxes. Municipal bonds are subject to credit risk and potentially the Alternative Minimum Tax (AMT). Quality varies widely depending on the specific issuer. Municipal securities are also subject to legislative and regulatory risk which is the risk that a change in the tax code could affect the value of taxable or tax-exempt interest income. **Treasury Inflation-Protected Securities (TIPS)**, are subject to interest rate risk, especially when real interest rates rise. This may cause the underlying value of the bond in the portfolio to fluctuate more than other fixed income securities. U.S. government securities are backed by the full faith and credit of the federal government as to payment of principal and interest if held to maturity and are subject to interest rate risk. **Foreign securities** entail special risks such as currency, political, economic, and market risks. These risks are heightened in emerging and frontier markets. **Commodities** may be affected by changes in overall market movements, commodity index volatility, changes in interest rates or factors affecting a particular industry or commodity. Investments in securities of **Master Limited Partnerships (MLPs)** involve risks that differ from investments in common stock including risks related to limited control and limited rights to vote on matters affecting the MLP, risks related to potential conflicts of interest between the MLP and the MLP's general partner and cash flow risks, Other risks include the volatility associated with the use of leverage; volatility of the commodities markets; market risks; supply and demand; natural and man-made catastrophes; competition; liquidity; market price discount from NAV and other material risks. **Real estate** investing has special risks, including the possible illiquidity of the underlying property, credit risk, interest rate fluctuations and the impact of varied economic conditions

**Alternative investments**, such as hedge funds, private capital funds and private real estate funds, are speculative and entail significant risks that can include losses due to leveraging or other speculative investment practices, lack of liquidity, volatility of returns, restrictions on transferring interests in a fund, potential lack of diversification, absence and/or delay of information regarding valuations and pricing, complex tax structures and delays in tax reporting, less regulation and higher fees than mutual funds. Hedge fund, private capital and private real estate fund investing involves other material risks including capital loss and the loss of the entire amount invested. They are intended for qualified, financially sophisticated investors who can bear the risks associated with these investments.

**Hedge fund strategies**, such as Equity Hedge, Event Driven, Macro and Relative Value, may expose investors to the risks associated with the use of short selling, leverage, derivatives and arbitrage methodologies. Short sales involve leverage and theoretically unlimited loss potential since the market price of securities sold short may continuously increase. The use of leverage in a portfolio varies by strategy. Leverage can significantly increase return potential but create greater risk of loss. Derivatives generally have implied leverage which can magnify volatility and may entail other risks such as market, interest rate, credit, counterparty and management risks. Arbitrage strategies expose a fund to the risk that the anticipated arbitrage opportunities will not develop as anticipated, resulting in potentially reduced returns or losses to the fund.



# Index definitions

## Fixed Income

**U.S. Taxable Inv Grade Fixed Inc: Bloomberg Barclays U.S. Aggregate Bond Index** is unmanaged and is composed of the Bloomberg Barclays U.S. Government/Credit Index and the Bloomberg Barclays U.S. Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities.

**U.S. Municipal Fixed Inc: Bloomberg Barclays U.S. Municipal Index** represents municipal bonds with a minimum credit rating of at least Baa, an outstanding par value of at least \$3 million and a remaining maturity of at least one year. The index excludes taxable municipal bonds, bonds with floating rates, derivatives and certificates of participation.

**U.S. High Yield Fixed Inc: Bloomberg Barclays U.S. Corporate High Yield Index** covers the universe of fixed rate, non-investment grade debt.

**U.S. Treasury Fixed Inc: Bloomberg Barclays U.S. Treasury Index** is the U.S. Treasury component of the U.S. Government Index. The index consists of public obligations of the U.S. Treasury with a remaining maturity of one year or more.

**Developed ex-U.S. Fixed Inc: JPMorgan Global ex-U.S. Government Bond Index** measures the performance of non-U.S. government bonds.

**Emerging Market Fixed Income: JPMorgan Emerging Markets Bond Index (EMBI Global)** currently covers 27 emerging market countries. Included in the EMBI Global are U.S.-dollar-denominated Brady bonds, Eurobonds, traded loans, and local market debt instruments issued by sovereign and quasi-sovereign entities.

**Bloomberg Barclays 1-3 Month U.S. Treasury Bill Index** includes all publicly issued zero-coupon U.S. Treasury Bills that have a remaining maturity of less than 3 months and more than 1 month, are rated investment grade, and have \$250 million or more of outstanding face value. In addition, the securities must be denominated in U.S. dollars and must be fixed rate and non-convertible.

**Bloomberg Barclays Mortgage Backed Securities (MBS) Index** is an unmanaged index of mortgage pools of the Government National Mortgage Association, Federal Home Loan Mortgage Corporation and Federal National Mortgage Association.

**Bloomberg Barclays U.S. Aggregate 5-7 Year Bond Index** is composed of the Barclays U.S. Government/Credit Index and the Barclays U.S. Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of 5-7 years.

**Bloomberg Barclays U.S. Aggregate 10+ Year Bond Index** is unmanaged and is composed of the Barclays U.S. Government/Credit Index and the Barclays U.S. Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of 10 years or more.

**Bloomberg Barclays U.S. Aggregate Corporate Bond Index** includes publicly issued U.S. corporate and Yankee debentures and secured notes that meet specified maturity, liquidity, and quality requirements.

**Bloomberg Barclays U.S. Investment Grade Bond Index** measures the performance of the investment grade corporate bond market.

**Bloomberg Barclays U.S. Municipal High Yield Index** measures the non-investment-grade and nonrated U.S.-dollar-denominated, fixed-rate, tax-exempt bond market within the 50 United States and four other qualifying regions (Washington, D.C.; Puerto Rico; Guam; and the Virgin Islands). The index allows state and local general obligation, revenue, insured, and prerefunded bonds; however, historically, the index has been comprised of mostly revenue bonds. The U.S. Municipal High Yield Index is a stand-alone index with no crossover into other Bloomberg Barclays taxable Indexes, such as the U.S. High Yield Index.

# Index definitions (continued)

**Bloomberg Barclays U.S. TIPS Index** consists of Inflation-Protection securities issued by the U.S. Treasury.

**Bloomberg Barclays Global Aggregate Bond Index** is a flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

## Equities

**U.S. Large Cap Equity: S&P 500 Index** is a capitalization-weighted index calculated on a total return basis with dividends reinvested. The index includes 500 widely held U.S. market industrial, utility, transportation and financial companies.

**U.S. Mid Cap Equity: Russell Midcap®** Index measures the performance of the mid-cap segment of the U.S. equity universe. The Russell Midcap Index is a subset of the Russell 1000® Index. It includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership. The Russell Midcap Index represents approximately 27 percent of the total market capitalization of the Russell 1000 companies.

**U.S. Small Cap Equity: Russell 2000 Index** measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 Index is a subset of the Russell 3000® Index representing approximately eight percent of the total market capitalization of that index. It includes approximately 2,000 of the smallest securities based on a combination of their market cap and current index membership.

**Developed Market ex-U.S. Equity: MSCI EAFE Index (Europe, Australasia, Far East)** is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US & Canada.

**Emerging Market Equity: MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets.

**Frontier Market Equity: MSCI Frontier Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance of frontier markets. The MSCI Frontier Markets Index consists of 24 frontier market country indexes.

**Russell 1000® Value Index** measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower expected growth values.

**Russell 1000® Growth Index** measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

**Russell 1000 Index** measures the performance of the 1,000 largest companies in the Russell 3000 Index, which represents approximately 92% of the total market capitalization of the Russell 3000 Index. The **Russell 3000 Index** measures the performance of the 3,000 largest U.S. companies based on total market capitalization, which represents approximately 98% of the investable U.S. equity market.

**MSCI All Country World Index (ACWI)** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The Index consists of 46 country indices comprising 23 developed and 23 emerging market country indices.

**MSCI Australia Index** is designed to measure the performance of the large and mid cap segments of the Australia market. With 70 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Australia.

# Index definitions (continued)

**MSCI Brazil Index** is designed to measure the performance of the large and mid-cap segments of the Brazilian market. With 75 constituents, the index covers about 85% of the Brazilian equity universe.

**MSCI China Index** captures large and mid-cap representation across China H shares, B shares, Red Chips and P Chips. With 140 constituents, the index covers about 85% of the China equity universe.

**MSCI Germany Index** is designed to measure the performance of the large and mid cap segments of the German market. With 54 constituents, the index covers about 85% of the equity universe in Germany.

**MSCI United Kingdom Index** is designed to measure the performance of the large and mid cap segments of the UK market. With 112 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the UK.

**MSCI U.S. Equity Indexes** are a domestic only series - independent from MSCI's Global Equity Index family – which reflect the investment opportunities in the US equity markets by market capitalization size, by value and growth investment styles and by sectors and industries.

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## Real Assets

**Commodities: Bloomberg Commodity Index** represents futures contracts on 22 physical commodities. No related group of commodities (e.g., energy, precious metals, livestock and grains) may constitute more than 33 percent of the index as of the annual re-weightings of the components. No single commodity may constitute less than 2 percent of the index.

**Public Real Estate: FTSE EPRA/NAREIT Developed Index** is designed to track the performance of listed real-estate companies and REITs in developed countries worldwide.

**The S&P Global Infrastructure Index** is designed to track 75 companies from around the world chosen to represent the listed infrastructure industry while maintaining liquidity and tradability. To create diversified exposure, the index includes three distinct infrastructure clusters: energy, transportation, and utilities.

**Alerian MLP Index** is a composite of the 50 most prominent energy Master Limited Partnerships (MLPs) that provides investors with an unbiased, comprehensive benchmark for this emerging asset class. The index, which is calculated using a float-adjusted, capitalization-weighted methodology, is disseminated real-time on a price-return basis and on a total-return basis.

# Index definitions (continued)

## Hedge Fund

**Event Driven: HFRI Event Driven Index:** Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated, and frequently involve additional derivative securities. Event Driven exposure includes a combination of sensitivities to equity markets, credit markets and idiosyncratic, company specific developments. Investment theses are typically predicated on fundamental characteristics (as opposed to quantitative), with the realization of the thesis predicated on a specific development exogenous to the existing capital structure. The HFRI Event Driven Index is a composite of the hedge funds that employ the alternative strategies and who report their performance figure to HFRI. The number of hedge funds reporting may vary between each reporting period.

**Equity Hedge: HFRI Equity Hedge Index:** Investment Managers who maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. EH managers would typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities, both long and short. The HFRI Equity Hedge Index is a composite of the hedge funds that employ the alternative strategies and who report their performance figure to HFRI. The number of hedge funds reporting may vary between each reporting period.

**Global Hedge Funds: HFRI Fund Weighted Composite Index** is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net-of-all-fees performance in U.S. dollars and have a minimum of \$50 million under management or a 12-month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds. The HFRI Fund Weighted Composite Index is a composite of the hedge funds that employ the alternative strategies and who report their performance figure to HFRI. The number of hedge funds reporting may vary between each reporting period.

**Macro: HFRI Macro Index:** Macro: Investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom up theses, quantitative and fundamental approaches and long and short term holding periods. Although some strategies employ RV techniques, Macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments, rather than realization of a valuation discrepancy between securities. In a similar way, while both Macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposed to EH, in which the fundamental characteristics on the company are the most significant are integral to investment thesis. The HFRI Macro Index is a composite of the hedge funds that employ the alternative strategies and who report their performance figure to HFRI. The number of hedge funds reporting may vary between each reporting period.

**Relative Value: HFRI Relative Value Index** maintains positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities. Managers employ a variety of fundamental and quantitative techniques to establish investment theses, and security types range broadly across equity, fixed income, derivative or other security types. Fixed income strategies are typically quantitatively driven to measure the existing relationship between instruments and, in some cases, identify attractive positions in which the risk adjusted spread between these instruments represents an attractive opportunity for the investment manager. RV position may be involved in corporate transactions also, but as opposed to ED exposures, the investment thesis is predicated on realization of a pricing discrepancy between related securities, as opposed to the outcome of the corporate transaction.

The HFRI Indices are based on information self-reported by hedge fund managers that decide, on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, LLC (HFR). Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these indices may not be complete or accurate representations of the hedge fund universe, and may be biased in several ways. Unlike most asset class indices, HFR index returns reflect fees and expenses. Index returns do not reflect any fees, expenses or sales charges. Unlike most asset class indices, HFR index returns reflect fees and expenses.

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